EXHIBIT C

EXHIBIT 2

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UNITED STATES DISTRICT COURT
FOR THE WESTERN DISTRICT OF WASHINGTON
AT SEATTLE

IN RE: VALVE ANTITRUST LITIGATION
Case No. 2:21-cv-00563-JCC

EXPERT REPORT OF PROFESSOR JOOST RIETVELD

February 8, 2024

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I. QUALIFICATIONS

1. I am an Associate Professor in the Strategy & Entrepreneurship group at the UCL School of Management, University College London. Before joining UCL, I was a faculty member at the Rotterdam School of Management, Erasmus University. I received a BSc and an MSc from the University of Groningen and a PhD from Bayes Business School (formerly Cass Business School), City, University of London. As part of my doctoral studies, I studied at NYU's Stern School of Business for over two years.

2. My research has appeared in leading academic journals in the domains of strategic management, entrepreneurship and innovation management. These include *Strategic Management Journal*, *Organization Science*, *Strategy Science*, *Research Policy*, *Journal of Management,* and *Strategic Entrepreneurship Journal*.

3. I am an editorial board member for *Strategy Science*, *Strategic Management Journal*, *Journal of Management*, and *Strategic Entrepreneurship Journal*.

4. My research focuses on matters related to platform competition and platform strategy. This includes research on how platforms compete with each other, but also how competition within platforms (*e.g.*, between video game developers, app developers, or crowdfunding project creators) is affected by changes at the platform level (*e.g.*, rule changes, evolutionary dynamics). I have performed extensive research on the video game industry, which is often labelled a "canonical" platform context.

5. I teach a Masters-level course on business strategy at UCL. At Erasmus University I taught an elective course on platform competition to MSc students. At NYU and at the New York Film Academy I taught a course on the video game industry.

6. I consulted for Microsoft in relation to its $68 billion acquisition of the video game publisher Activision Blizzard. I am also an educational member of the U.K. trade association for the interactive entertainment industry, Ukie. Prior to entering academia, I was employed by Two Tribes, an independent Dutch video game developer. Two Tribes published several games on Steam, including some that were released during my tenure at the company (*Toki Tori* and *Rush*).

7. My research and commentary have been covered by a wide range of leading media, including *Reuters*, *Financial Times*, *Bloomberg*, *The Times* (Raconteur), *TechCrunch*, *Wired*, *Polygon*, *Vox Recode*, *GamesIndustry.biz*, *GameSpot*, *LinkedIn News*, *Deal Reporter*, *Seeking Alpha*, *City AM*, *Financieel Dagblad* (Dutch Financial Times), and *Business News Radio* (Dutch). I received several awards and recognitions for my research, my teaching and for my service to the academic community.

8. A copy of my curriculum vitae is attached as **Appendix A**. I have not provided testimony in any prior cases.

II. ASSIGNMENT

9. I have been asked to apply my industry background and expertise to provide testimony on the following four topics:

A. general background information on the personal computer ("PC") video game industry, including the role of game developers and publishers in the creation and sale of PC video games;

B. the extent of multihoming across gaming device types and among digital PC game distribution platforms;

C. the extent to which other digital PC game distribution platforms, retailers, subscription models, and cloud gaming are viable alternatives to Steam for distribution of PC games; and

D. the extent to which PC game publishers would engage in content differentiation across digital PC game distribution platforms in the absence of Valve's content-parity requirements.

10. After providing a brief background on the case, I address these topics below in Sections VI through XII.

11. My pay rate for this project is $650 per hour. My compensation is not contingent on the outcome of this case or the opinions I put forth.

III. MATERIALS CONSIDERED

12. In conducting the analysis and developing the opinions put forth in this report, I and professionals working under my supervision and direction reviewed and analyzed various pleadings, filings, testimony, information produced by the parties, academic publications, industry reports and data, and other documents and information that is publicly available. The information I relied upon in forming my opinions is cited throughout the body of this report and listed in **Appendix B**. Along with the information I reviewed and relied on, the opinions I put forth in this report are based on my training, education, professional experience, and familiarity with the relevant industry, professional literature, and research.

13. This report reflects my analyses and opinions as of the date it was issued. If additional data, testimony, or other information that is relevant to my analyses and opinions become available to me after the issuance of this report, I intend to review that information and may modify or update my opinions as I deem necessary. Additionally, I may prepare demonstratives if asked to testify at a hearing or trial.

IV. SUMMARY OF OPINIONS

14. Based on my independent research, analysis, and review and consideration of materials produced in connection with this matter, along with my education, training, and experience, I have formed the following opinions:

A. The PC video game segment has grown and increased in popularity among consumers and PC game developers/publishers since the advent of digital distribution as a viable alternative to (first) and replacement of (later) the physical distribution of PC games. Established in 2003, and turned into a third-party distribution platform in 2005, Valve's digital PC game distribution platform (Steam) has since become the single dominant distribution platform for PC games.

B. Multi-homing in the context of video game platforms can occur on both the player and the publisher side.

   1. On the player side, multi-homing is attributable to the complementarity that exists between the different device types (*e.g.*, consoles vs. PCs) and the different types of games that are released for those devices.

   2. PC game players are generally Steam users that may multi-home to the Epic Games Store or self-distribution platforms if those platforms offer (timed) exclusive content or materially differentiated content.

   3. On the publisher side, based on conservative assumptions, at most, 24% of new games released on Steam (in 2021) could have multi-homed to a console device. Entry barriers for developers/publishers of console games are significantly higher than they are for PC games published through Steam.

   4. Mobile devices are technologically differentiated from PCs, which results in many (especially smaller) developers specializing in either mobile game development or PC game development, but not both.

   5. While publishers that operate their own self-distribution platforms often self-distribute their games and distribute them through Steam, multi-homing rates of games between Steam and rival third-party distribution platforms are low.

C. None of the current offerings in the PC game landscape are viable alternatives to Steam:

   1. Other third-party PC game distribution platforms are not a viable alternative to PC game distribution through Steam – the Epic Games Store has been the most significant attempt to compete directly with Steam as rival third-party PC game distribution platform. However, after five years of operations, and despite significant expenditures and effort directed towards subsidizing PC game

developers/publishers and PC game players to create a third-party PC game distribution platform that is an alternative to Steam, Epic Games has thus far failed to demonstrate that it is possible to do so in a financially viable manner.

2. Self-distribution platforms are not a viable alternative to PC game distribution through Steam – self-distribution platforms are costly to develop and maintain, limiting the model to only the largest publishers with the financial wherewithal to support their own platforms. From the perspective of PC game players, self-distribution platforms offer a relatively limited selection of games. Ubisoft, EA, and Activision Blizzard, three large PC game publishers that operate self-distribution platforms, each attempted to pull their games from Steam in favor of self-distribution but have all since returned to distributing games through Steam.

3. Retailers are not a viable alternative to PC game distribution through Steam – given that retailers are no longer selling physical copies of PC games, by selling game activation codes they are merely a channel through which their customers are directed to digital PC game distribution platforms such as Steam. Thus, retailers are not an alternative to Steam for PC game distribution. Rather, retailers are ancillary, complementary channels through which players are directed to Steam for distribution of PC games.

4. Subscription models are not a viable alternative to PC game distribution through Steam – subscription models are merely different ways to structure transactions for PC game distribution on existing platforms.

5. Cloud gaming is not a viable alternative to PC game distribution through Steam – there are currently three consumer-facing "cloud gaming" models:

   i. Cloud-gaming-as-a-feature – is merely an incremental value-enhancing addition to the primary offerings of existing platforms.

   ii. Cloud-gaming-as-a-platform – may plausibly present an alternative to Steam for PC game distribution, in theory. However, there is currently no viable cloud-gaming-as-a-platform service in the PC game landscape, nor is one likely to become a viable alternative to Steam for PC game distribution in the near future.

   iii. Cloud-gaming-as-a-complement – works along with existing digital PC game distribution platforms, such as Steam, in a complementary manner, and thus is not a viable alternative to Steam for PC game distribution.

D. Steam's dominant position has enabled it to implement and enforce undesirable parity requirements, which hamper PC game developer/publishers from innovating and offering differentiated game content, as well as limiting entry and growth of rival third-party PC game distribution platforms. Absent Valve's parity requirements, PC game developers/publishers would increase content differentiation and competition among PC

game distribution platforms would be enhanced, benefiting PC game developers/publishers and PC game players.

V. CASE BACKGROUND

A. Parties

i. Plaintiffs

15. According to the Amended Complaint, Wolfire Games, LLC ("Wolfire") is a video game publisher headquartered in San Fransisco, California.[1] Wolfire has entered into Steam Distribution Agreements ("SDAs") with Valve to make its PC video games compatible with Steam, and to sell its games through the Steam store.[2] As of January 2024, Wolfire offered five games and three game soundtracks on Steam.[3]

16. According to the Amended Complaint, Dark Catt Studios Holdings, Inc., ("DCS Holdings") is a multimedia production company and development studio with a focus on film, animation, and narrative media forms.[4] Dark Catt Studios Interactive LLC ("DCS Interactive" and collectively with DCS Holdings, "Dark Catt") specializes in PC software, gaming, interactive content, and experiences.[5] Further, according to the Amended Complaint, Dark Catt has entered into an SDA with Valve and sold at least one game on Steam.[6]

ii. Class definition

17. I understand that the class in this matter is defined as all persons or entities who, directly or through an agent, paid a commission to Valve in connection with the sale or use of a game on

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1 Consolidated Amended Class Action Complaint and Demand for Jury Trial, Case No. 2:21-cv-00563-JCC, Doc. 99, August 26, 2022 (hereafter, "Amended Complaint"), pp. 1, 7.

2 Amended Complaint, pp. 7-8.

3 https://store.steampowered.com/franchise/wolfire/.

4 Amended Complaint, pp. 1, 8.

5 Amended Complaint, pp. 1, 8.

6 Amended Complaint, p. 8.

the Steam platform on or after January 28, 2017, and continuing through the present until the effects of its scheme are eliminated (the "Class Period"), and where either (1) the person or entity was based in the United States and its territories or (2) the game was purchased or acquired by a United States-based consumer during the Class Period. Excluded from the Class are (a) Defendant, its parents, subsidiaries, affiliate entities, and employees, and (b) the Court and its personnel.

iii. Valve

18. Valve is a privately-owned entertainment software and technology company that was founded in 1996 with its headquarters in Bellevue, Washington.[7] Valve began as a PC video game developer, releasing its debut title, *Half-Life*, in 1998.[8] Since the release of *Half-Life*, Valve developed dozens more PC video games and game franchises, including *Half-Life 2*, *Left 4 Dead*, and *Counter-Strike*.[9]

19. In 2002, Valve announced Steam, a "broadband business platform for direct software delivery and content management."[10] Steam has since become the dominant PC game distribution platform, offering approximately an estimated 75,000[11] or more games as of the time of this report, hosting 132 million monthly active users as of 2021, and [redacted][12]

[7] https://www.linkedin.com/company/valve-corporation.

[8] https://www.valvesoftware.com/en/about.

[9] https://www.valvesoftware.com/en/about.

[10] https://www.gamespot.com/articles/gdc-2002-valve-unveils-steam/1100-2857298/; https://valvearchive.com/press-releases.

[11] I have reviewed Attachments G-1 and G-2 to the Class Certification Report of Steven Schwartz, Ph.D., which show the count of unique games on Steam through 2022. Based on my review, the trend in new games released is consistent with the game count data that I rely on from Steam Spy. Further, Attachments G-1 and G-2 to Dr. Schwartz's report indicate that the Steam Spy data may understate the number of unique games released on Steam. However, here and throughout the rest of this report, I rely on the data from Steam Spy.

[12] Data compiled from *SteamSpy.com*; https://store.steampowered.com/news/group/4145017/view/3133946090937137590; 30(b)(6) Deposition of

B. Claims

20. Plaintiffs have alleged that Valve, through its ownership of Steam, has a monopoly in the PC game distribution market and engages in certain anticompetitive conduct to maintain that monopoly. This anticompetitive conduct allegedly precludes rivals from competing effectively and thereby enables Valve to maintain the supracompetitive commission rate it charges game publishers to sell games on the Steam platform. It is further alleged that Valve's conduct does not enhance market efficiency and is harmful to Plaintiffs and Class Members because they are forced to pay the supracompetitive commission rate to sell content on the Steam platform.[13]

VI. VIDEO GAME PRODUCTION

A. Background on the video game industry

21. Video games have existed since at least the 1950s, though the industry did not see widespread popularity until the 1970s or 1980s when video game consoles were first introduced.[14] Video game consoles are devices dedicated solely to playing video games and are usually connected to a player's television. The first video game console was the Magnavox Odyssey, which was released in 1972 and had little commercial success.[15] At that time, video game consoles were preloaded with a select few games, like arcade gaming boxes.

22. It wasn't until the late 1970s that video games were sold separately from the console as interchangeable cartridges. At the time, many new consoles were being introduced, reportedly causing confusion among consumers given that there was little differentiation between the devices.

Scott Lynch, October 13, 2023, Exhibit 152.

13 Amended Complaint, pp. 104-109.

14 See, for example, https://www.lg.com/ca_en/gaming/a-brief-history-of-gaming/.

15 https://www.computermuseumofamerica.org/2020/06/22/the-first-gaming-console/.

Furthermore, quality controls were lax, leading to brands like Quaker Oats and Kool-Aid introducing quickly developed and low-quality games.[16] These were among the factors that led to what many called the "Video Game Crash of 1983," where video game sales dropped 97% from 1982 to 1985.[17]

23. In October 1985, Nintendo introduced the Nintendo Entertainment System ("NES") in the United States.[18] The NES, with its new "game paks" (cartridges) and stringent requirements for game developers (*e.g.*, minimum quantity production orders on cartridges, a maximum number of games published per year, and timed-exclusivity restrictions), revived the video game market in the United States.[19]

24. Since that time, the video game industry has gone through many changes, including the emergence of new gaming devices (*e.g.*, handheld consoles and mobile devices) and significant advances in gaming technologies. Facilitated by the advent of digital distribution, there have also been significant changes in how video games are commercialized (*e.g.*, buy-to-play, free-to-play, downloadable content ("DLC"), and subscription models).

25. The shift towards digital purchasing and distribution that began around the early 2000s has been one of the major evolutions in the video game industry. Prior to this shift, video games were primarily purchased as physical media, typically in the form of a floppy disk, CD-ROM, or console-specific game cartridge, such as the NES "game paks." Consumers purchased or rented video games from brick-and-mortar retailers such as GameStop, Walmart, and Blockbuster Video.

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[16] https://michaeldangelo99.medium.com/the-brick-that-saved-the-gaming-industry-cd0f041471e4.

[17] https://history-computer.com/what-was-the-video-game-crash-of-1983-and-why-did-it-happen/.

[18] https://arstechnica.com/gaming/2021/12/time-to-feel-old-inside-the-nes-on-its-30th-birthday/.

[19] https://arstechnica.com/gaming/2021/12/time-to-feel-old-inside-the-nes-on-its-30th-birthday/.

26. Though it was not the first digital video game distribution platform, the emergence of Steam, which began offering third-party PC games in 2005,[20] and improvements to high-speed internet are often credited as paving the way for the transition to digital distribution in the PC video game industry.[21] Major console manufacturers followed suit, introducing or enhancing versions of their own digital content distribution platforms (*e.g.*, Nintendo's Wii Shop, Sony's PlayStation Store, and Microsoft's Xbox Live).[22] In a 2019 report, the Entertainment Software Association ("ESA") estimated that 83% of video game sales in the United States were digital in 2018.[23]

27. As of the date of this report, the video game industry is estimated to be the largest entertainment industry in the world, generating more revenues than books, movies, or music.[24] Newzoo, a provider of video game industry data and analysis, estimated that there were approximately 3.38 billion video game players worldwide in 2023, with approximately 237 million of those players residing in North America.[25]

28. Developers, publishers, and distributors all play important roles in the video game industry. A discussion of the roles these participants play and how they facilitate the value chain of video games follows below.

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20 https://www.gamesradar.com/history-of-valve/.

21 van Dreunen, Joost, "Chapter 7: Glorious Return of PC Gaming." *One Up: Creativity, Competition, and the Global Business of Video Games*, Columbia Business School Publishing (2020): 130–153, pp. 134–138; https://www.gameopedia.com/decline-of-physical-games/.

22 *E.g.*, Microsoft introduced full digital game downloads on the Xbox Live Marketplace in 2007. https://www.cnet.com/tech/gaming/a-brief-history-of-downloadable-console-games/.

23 "Essential Facts About the Computer and Video Game Industry," Entertainment Software Association, 2019, p. 20.

24 https://www.statista.com/chart/22392/global-revenue-of-selected-entertainment-industry-sectors/.

25 "Global Games Market Report" (Free Version), Newzoo, October 2023, pp. 18-19.

B. Video game development

29. Video game developers oversee the design and development of video games. The development process by itself can include many different functions, including conceptualizing the game, writing the code on which the game runs, creating the graphics and sounds for the game, and testing the game at different stages of the development process. Development of a video game can be done by a single person or by a large company, commonly referred to as a video game studio, with dedicated teams for each step in the development process. Major video game developers include Activision, Bethesda, BioWare, Ubisoft, Microsoft, and Valve.

30. To begin the development process, the developer starts with the overarching concept for a game and determines which genre(s) the game will fall under. In the past, video game genres were clearly defined (*e.g.*, puzzle, racing, and fighting). Today, video game developers continually blend and create new genres. Depending on the genre, the developer makes decisions about the characters in the game (*e.g.*, aliens, humans, or both), environment(s) for the game (*e.g.*, jungle or futuristic), sounds, color, and story, among other elements of the video game.

31. Once the developer has established the game concept, it begins the design and programming process. Depending on the complexity of the game, this process may require engaging third-party assistance such as a video game artist or licensing development software such as Unreal Engine from Epic Games or the Unity game engine from Unity Technologies.

32. Before releasing a game with (or without) the help of a publisher, a developer must test the game to ensure that it works as intended. Many game developers also hire professional testers to identify glitches and provide feedback from a player's perspective. Given the high degree of variation among video games, the development process varies greatly in terms of complexity,

duration, and resources invested. Some games cost many millions of dollars to develop over several years, while simplistic games can be developed in less than an hour at almost no cost.

33. As with any product, developers strive to realize a return on their investments. Thus, developers that make relatively large investments to develop a game hope to generate relatively large revenues from the game. For example, *Grand Theft Auto V* ("*GTA 5")*, said to be one of the most successful video games of all time, was estimated to cost around $137.5 million to develop over several years.[26] Since its release in 2013, *GTA 5* is estimated to have generated $8.3 billion worldwide revenues as of late 2023.[27] However, a development budget is not the sole factor determining a game's commercial success. There are numerous examples of large investment flops (*e.g.*, *Marvel's Avengers*) and small investment blockbusters (*e.g.*, *Hollow Knight*).[28]

C. Video game publishing

34. Video game publishers are entities that oversee the process of preparing the game for sale. The role of publishers typically involves financing the game, marketing the game, establishing relationships with distributors and platforms, or acquiring licenses for intellectual property used in the game. As discussed in more detail below, vertical integration of publishing activities with development and distribution activities is common, particularly among larger video game studios. Major video game publishers include Activision, Bethesda, Electronic Arts ("EA"), Microsoft, Ubisoft, and Valve.

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26 https://www.ign.com/articles/best-selling-video-games-of-all-time-grand-theft-auto-minecraft-tetris; https://www.gamesindustry.biz/gta-v-dev-costs-over-usd137-million-says-analyst.

27 https://superjoost.substack.com/p/the-joy-of-six?utm_campaign=email-half-post&r=cy3xq&utm_source=substack&utm_medium=email.

28 https://www.ign.com/articles/marvels-avengers-hasnt-recouped-its-development-costs-yet; https://www.gameinformer.com/2018/10/16/the-making-of-hollow-knight.

35. Effective marketing is an important part of a video game's success. Larger publishers may spend millions of dollars marketing their games. In the case of *GTA 5*, it is estimated that publisher Take-Two Interactive Software ("Take-Two") spent over $100 million to market the game in addition to the estimated $137.5 million in development costs.[29] However, most independent (colloquially referred to as "indie") developers, with small marketing budgets, need a focused marketing strategy incorporating both paid and organic marketing.[30] Digital distribution platforms have paved the way for indie developers to self-publish their own games.

D. Video game distribution and retailing

36. Video game distributors are companies or entities responsible for overseeing the process of getting video games in front of consumers. Prior to the emergence of digital distribution platforms, the role of a video game distributor was more clearly defined and separate from the role of a retailer. The distributor was responsible for physically delivering games to various brick-and-mortar retailers, such as GameStop or Walmart, where consumers could purchase video games.

37. Although the allocation of value varied, for console gaming in the pre-digital distribution era, it was estimated that, on average, the console manufacturer captured 20% of retail value, the game developer and publisher captured 40% of retail value (combined), the distributor captured 10% of retail value, and the retailer captured 30% of retail value.[31] Given the absence of console manufacturers in the PC game value chain, developers/publishers of PC games were able to capture

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[29] https://gamerant.com/grand-theft-auto-5-development-cost-budget-breakdown/; https://www.gamesindustry.biz/gta-v-dev-costs-over-usd137-million-says-analyst.

[30] "Indie developers" describes small independent developer teams with relatively low development budgets. Similarly, games made by indie developers are often referred to as "indie games."

[31] Johns, Jennifer, "Video Games Production Networks: Value Capture, Power Relations and Embeddedness," *Journal of Economic Geography* 6 (2006): 151–180, p. 163.

the estimated 20% royalties that console manufacturers collected.[32] Thus, it was estimated that PC software developers and publishers were able to capture 60% (combined) of retail value, with distributors capturing 10% of retail value, and retailers capturing the remaining 30% of retail value.[33]

38. The emergence of digital distribution has disrupted the traditional video game value chain[34] and drastically minimized the roles of physical distributors and brick-and-mortar retailers. The ability to deliver video games directly to a device via download obviated the need for distributors to deliver physical media to retail locations. Further, the value added by brick-and-mortar retailers was also largely obviated by digital distribution platforms. With digital distribution there is no need to staff and maintain physical locations close to consumers with a wide selection of physical inventory.

39. Through this shift to digital distribution of video games, digital distribution platforms now also act as the distributor and, in most cases, the retailer for video games, largely eliminating costs associated with distributing and retailing physical video games. This consolidation of roles has rendered digital distribution platforms powerful actors, and potential bottlenecks, in video game production value chains. [redacted]

32 Johns, Jennifer, "Video Games Production Networks: Value Capture, Power Relations and Embeddedness," *Journal of Economic Geography* 6 (2006): 151–180, p. 164.

33 Estimate based on PC software industry in the United Kingdom. Johns, Jennifer, "Video Games Production Networks: Value Capture, Power Relations and Embeddedness," *Journal of Economic Geography* 6 (2006): 151–180, p. 164.

34 A "value-chain" is commonly understood to describe the various value-adding steps involved in producing goods or services, starting with raw materials and ending with delivery or consumption of the product or service. See, for example, https://online.hbs.edu/blog/post/what-is-value-chain-analysis.

[redacted]."[35]

40. Although distribution of video games has predominantly shifted to digital, both brick-and-mortar and online retailers are still present in the video game value chain. However, these retailers are typically selling activation keys or game keys (*e.g.*, Steam Keys; Epic Games Keys, GOG Keys) that enable customers to download games from digital distribution platforms. Activation keys are unique alphanumeric codes that give customers access to download, install, and activate games from a digital distribution platform. Thus, the retailer may sell the game, but the customer is still downloading and accessing the game from a digital distribution platform.

41. Figure 1 below illustrates the pre-digital distribution video game value chain and the post-digital distribution value chain in which the physical distribution and brick-and-mortar retailing roles have been greatly minimized.

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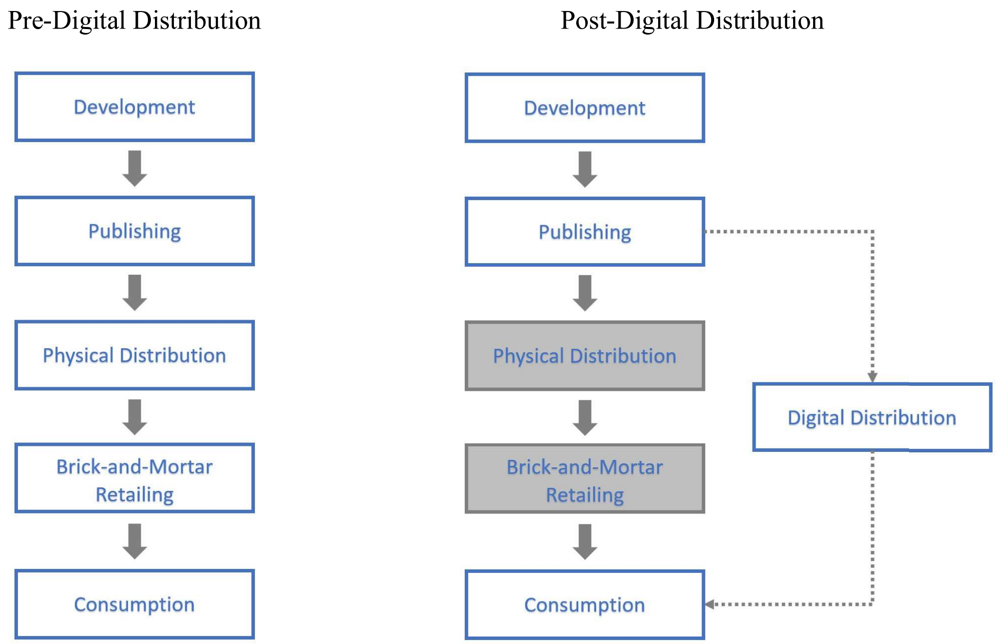
[35] VALVE_ANT_0051858.

Figure 1. Video Game Production Value Chain[36]



E. Vertical integration in the video game value chain

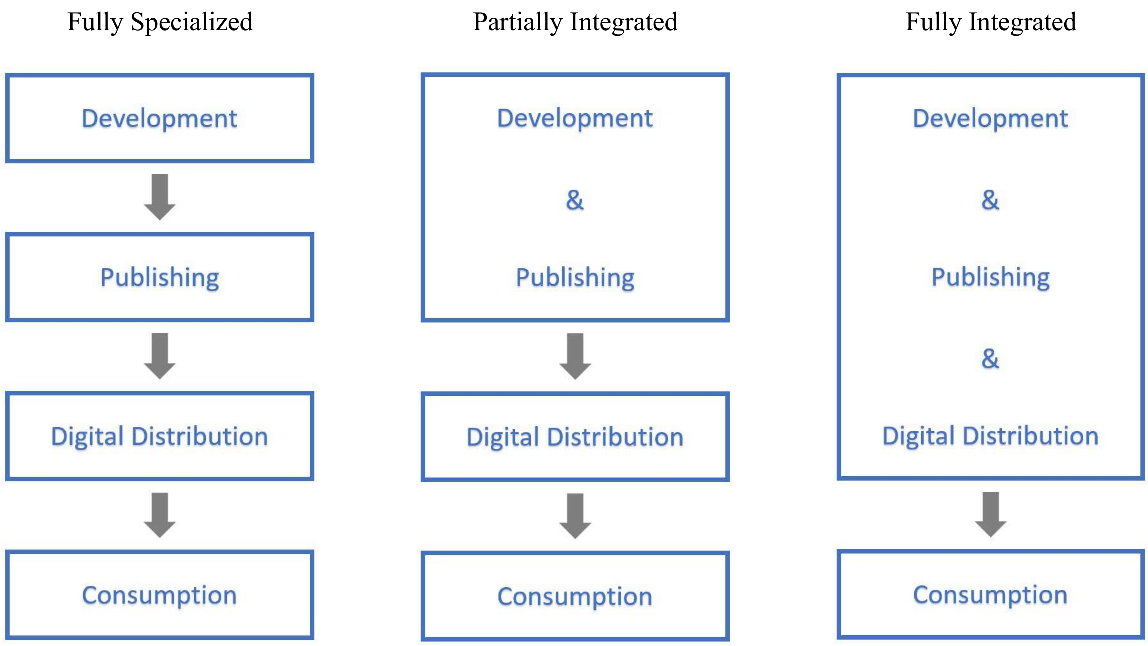
42. While many game developers only perform development functions in the video game production value chain it is common for publishers to also perform development roles. In this way, there is partial integration of the video game production value chain. Examples of partially integrated publishers include Square Enix, Take-two, and FromSoftware.

43. Large publishers, such as Valve, Epic, and Microsoft are also integrated to include distribution functions through operation of their digital distribution platforms. This creates instances of fully integrated value chains, in which the owners of digital distribution platforms are also publishers and developers of video games distributed through the platforms. Notably, most owners of digital distribution platforms are also publishers and developers, but not all publishers

36 Zackariasson, P., & Wilson, T. L. (Eds.), *The Video Game Industry: Formation, Present State, and Future* 1st ed., New York: Routledge, p. 4; and González-Piñero, M., *Redefining the Value Chain of the Video Game Industry*, Kunnskapsverket (2017), pp. 20, 24.

and developers own digital distribution platforms. Figure 2 below illustrates the various degrees of vertical integration in the video game value chain.

Figure 2. Vertical Integration in the Video Game Production Value Chain



44. The different degrees of vertical integration can be observed by examining the value chains for different video games. Table 1 below illustrates the value chains for three exemplar games.

Table 1. Examples of Vertical Integration in the Video Game Value Chain

	Fully Specialized	**Partially Integrated**	**Fully Integrated**
Game	***Crysis 2*** 	***Hollow Knight*** 	***Super Mario Bros. Wonder*** 
Developer	CRYTEK	team cherry	Nintendo®
Publisher	EA	team cherry	Nintendo®
Distribution Platform(s)[37]	Nintendo Switch, Xbox, PlayStation, Steam, EA, Epic Games	Nintendo Switch, Xbox, PlayStation, Steam	Nintendo Switch

45. The column for *Crysis 2* in the table above illustrates a fully specialized value chain, where the developer (Crytek) is separate from the publisher (EA), which is separate from the various platforms through which the game is distributed. The column for *Hollow Knight* illustrates a partially integrated value chain, where the developer and publisher (Team Cherry) are the same

[37] *Crysis 2* and *Hollow Knight* may also be available on additional platforms.

entity but separate from the various platforms through which the game is distributed. Finally, the column for *Super Mario Bros. Wonder* illustrates a fully integrated value chain, where the developer, publisher, and owner of the distribution platform are the same entity (Nintendo).

46. Table 1 above illuminates several other notable considerations. First, while some games multi-home across various distribution platforms, some games are exclusively available on a single distribution platform. While *Crysis 2* and *Hollow Knight* are distributed through the three major console platforms and at least through Steam for PC versions of the games, *Super Mario Bros. Wonder* is exclusively distributed through Nintendo for the Switch device. Exclusive distribution of video games is also possible in partially integrated value chains. In this case, the reasons for exclusive distribution will vary and may include a publisher receiving financial compensation from the platform owner to release its game exclusively or the publisher or developer specializing in a single platform and/or not having the relevant licenses to distribute on multiple platforms.

47. A second consideration illuminated by the table above is that most major platforms are fully integrated, having their own development and publishing operations. The *Super Mario Bros. Wonder* example illustrates how Nintendo, the manufacturer of the Switch device, developed, published, and distributed the game through its platform. In addition to their own games, most owners of major platforms will distribute third-party games produced through fully specialized and partially integrated value chains. For example, both *Crysis 2*, for which the value chain is fully specialized, and *Hollow Knight*, for which the value chain is partially integrated, are distributed on Nintendo's platform (among others). However, in some cases, as discussed in more detail below, publishers, such as Ubisoft, EA, and Activision, have established their own self-distribution platforms through which they distribute only their own games. These publishers will frequently

distribute the same game on their own self-distribution platforms and third-party PC game distribution platforms simultaneously. For example, EA, the publisher of *Crysis 2*, distributes the game through its own self-distribution platform and various other PC and console platforms.

48. The third consideration illuminated by the table above is that the extent of vertical integration is determined at the game level, not the firm level. For example, EA owns multiple development studios, but also publishes games from independent developers. As another example, Team Cherry may work with an external publisher for some of the games it develops. Furthermore, developers may work with external publishers for games distributed through some platforms and self-publish for games on other platforms.

VII. PC, CONSOLE, AND MOBILE CONSTITUTE DISTINCT SEGMENTS

49. Industry observers generally divide the overall video game industry into three distinct segments based on the type of device for which games are developed and where they are played (*i.e.*, PCs, consoles, and mobile devices).[38] A discussion of each segment follows below.

A. PC gaming segment

50. The history of PC gaming can be traced back to at least the 1950s. However, it wasn't until the 1980s and 1990s that PC gaming saw significant growth among the public as personal computers became more affordable. Despite this growth and the introduction of several popular PC game franchises (*e.g.*, *Doom*, *SimCity*, and *Half-Life*), popularity of PC gaming lagged console

[38] See, for example, https://newzoo.com/games-market-reports-forecasts (Newzoo enables readers to "[a]ccess the key games market numbers from 2015 to 2026: revenues players, payers per region and market, split across PC, console, and mobile."); https://www.ampereanalysis.com/products/about/games-markets (Ampere reports "[s]pend on games content and services across console, PC, mobile, & cloud"); and https://www.idgconsulting.com/idgsubscriptionresearch (IDG offers publications consisting of video game and esports "Industry Forecast Updates on PC, Console, and Mobile…").

gaming throughout the late 1990s and the 2000s.[39] In more recent years, PC gaming has regained its popularity due in large part to digital distribution.[40]

51. PC video games are sold separately from the player's PC, either through a physical medium (*e.g.*, CD-ROM), which has become increasingly rare, or downloaded through a digital distribution platform such as Steam. PC games are hardware agnostic, meaning that a player can use any PC to play the game, so long as the operating system (*e.g.,* Microsoft Windows) is compatible and the PC meets the game's minimum hardware requirements (*e.g.*, minimum required random access memory ("RAM") or processing power (expressed in gigahertz, GHz)). However, digitally downloaded PC games are typically tied to specific game distribution platforms.

52. PC game players generally prefer to use a mouse and keyboard as their input option. These players and many developers consider keyboards to be superior because of the relatively large selection of potential inputs (*i.e.*, 100+ keys). The large selection of inputs frequently offers players more abilities and control and can provide developers with more flexibility and opportunities to enhance the gaming experience. This enhanced control and flexibility can be especially beneficial when playing massively multiplayer online role-playing games ("MMORPGs") such as *World of Warcraft* and real-time strategy ("RTS") games such as *Age of Empires*.

53. Many PC players also appreciate the degree to which PCs can be customized. PCs contain many components that are not hardware-specific, giving video game players the ability to customize their PCs with third-party parts to enhance performance speeds, graphics, and memory.

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39 van Dreunen, Joost, "Chapter 7: Glorious Return of PC Gaming." *One Up: Creativity, Competition, and the Global Business of Video Games*, Columbia Business School Publishing (2020): 130–153, p. 153.

40 van Dreunen, Joost, "Chapter 7: Glorious Return of PC Gaming." *One Up: Creativity, Competition, and the Global Business of Video Games*, Columbia Business School Publishing (2020): 130–153, p. 151.

Along with this ability to customize gaming PCs, computer manufacturers have introduced specialized PCs in recent years that are specifically designed and enhanced for video games that require greater amounts of computing power.

B. Console gaming segment

54. Console video games are played on a gaming box or device (the console) specifically designed for video games. These consoles are connected to a player's television and/or come with a built-in screen (*i.e.*, handheld consoles such as the Nintendo Switch). Video game consoles require minimal setup, allowing players to "plug-and-play" without a complicated setup. Console games are console-specific (that is, a player cannot play a game purchased for the Microsoft Xbox console on a Sony PlayStation or Nintendo Switch). Video game consoles are typically sold with console-specific controllers that have a limited number of user input options (buttons), usually less than 15.

55. Historically, consoles are identified by generation and produced by just a handful of manufacturers. For example, the fifth generation of video game consoles included devices released in the mid-1990s including the Sega Saturn, the Nintendo 64, and the Sony PlayStation.[41] The sixth generation of consoles included consoles released in the late 1990s and early 2000s including the Sega Dreamcast, the Sony PlayStation 2, the Nintendo GameCube, and the Microsoft Xbox.[42] The seventh and eighth generations of consoles each saw new releases by Microsoft, Nintendo, and Sony between 2005 and 2017, whereas Sega's last console was the Dreamcast.[43] As of the

41 https://www.lg.com/ca_en/gaming/a-brief-history-of-gaming/.

42 https://www.lg.com/ca_en/gaming/a-brief-history-of-gaming/.

43 See, for example, https://www.cbr.com/7th-gen-console-changes-xbox360-ps3-nintendo-wii/ and https://history-computer.com/eighth-generation-video-game-consoles/.

issuance of this report, the most popular consoles are the Nintendo Switch (8th generation), Sony PlayStation 5 (9th generation), and Microsoft's Xbox Series X/S (9th generation). For the past three generations, Microsoft and Sony have generally followed the pattern of releasing a new console every seven years.

56. It is generally understood that console players must upgrade to the new generation of consoles for the best gameplay experience. Further, backwards compatibility of consoles (*i.e.*, the ability to play games released for a prior generation console) is limited. For these reasons, the release of a new generation of consoles has effectively created industry reset situations,[44] because players were provided with the opportunity to assess which console platform they prefer when the cost of switching to the updated version of a competing platform was roughly equivalent to the cost of purchasing the updated version of the player's existing console platform. These generational breaks contributed to different console manufacturers winning the "console wars" (*i.e.*, enjoying leading market shares) across different console generations (*e.g.*, the Nintendo Wii had the largest market share in the 7th console generation, whereas Sony's PlayStation 2 was the clear winner in the 6th console generation).

57. Intense competition among console manufacturers causes them to invest heavily in the development of their devices. This competition also causes console manufacturers to cut the price of their devices, typically selling them at a loss, to increase the installed base of their devices. Thus, rather than profiting from sales of the consoles, manufacturers generally attempt to establish a large installed base that will drive sales of games, and it is from the sale of games that

44 Ozalp, H., Eggers, J. P., & Malerba, F. "Hitting reset: Industry evolution, generational technology cycles, and the dynamic value of firm experience." *Strategic Management Journal* 44 no. 5 (2022): 1292–1327, p. 1294.

manufacturers hope to drive revenues and profits. This could be through the sale of proprietary games (*e.g.*, Nintendo selling games from the *Super Mario Bros.* franchise), or through collection of commissions from sales of third-party games for their console devices.[45]

58. To facilitate this revenue model, console manufacturers maintain control over the third-party games on their platforms by requiring that developers/publishers register with the console manufacturers, use the platforms' software development kits ("SDKs"), and submit games for approval before publishing. For example, after registering as a developer with Nintendo and executing a non-disclosure agreement, developers/publishers can access Nintendo's platform SDK to create their game for the Switch console.[46] Once the game is near completion, the developer/publisher will execute a publishing agreement, obtain an age rating, and submit the game to Nintendo for review and approval.[47] According to Nintendo, the review "process is necessary to ensure that the game can be safely played and conforms to Nintendo production standards."[48] Sony and Microsoft also require similar registration, use of platform SDKs, and game approval processes for publication of third-party games on the PlayStation and Xbox platforms, respectively.[49]

C. Mobile gaming segment

59. Mobile video games are video games played on mobile phones or tablets and have existed

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45 Johns, Jennifer, "Video Games Production Networks: Value Capture, Power Relations and Embeddedness," *Journal of Economic Geography* 6 (2006): 151–180, pp. 159, 162-164.

46 https://developer.nintendo.com/the-process.

47 https://developer.nintendo.com/the-process.

48 https://developer.nintendo.com/the-process.

49 https://playstationpartners.service-now.com/csm?id=kb_article2&sys_id=cf748f22db599b0082af8e146b96193c&smcid=partnerportal:help; https://developer.microsoft.com/en-US/games/publish.

since at least the mid-1990s with games like Snake.[50] At the time, mobile games were typically preloaded on certain mobile devices and considered simplistic. Following the emergence of smartphones and mobile application stores (*e.g.*, Apple's iOS App Store and Google Play) in 2008, the mobile gaming industry has grown significantly in terms of revenues, players, and game play.

60. The increase in popularity of mobile gaming has been attributed to the relative convenience, accessibility, and low cost associated with mobile gaming. Mobile games can be downloaded or purchased in seconds directly from an app store (*e.g.*, the Apple App Store) on a player's mobile device. The player can then access the game from any location if they have their mobile device. Many successful mobile games are free to download (*e.g.*, *Angry Birds* and *Candy Crush*), offering in-app purchases for more serious game players. Many mobile games also generate revenue through in-game advertising.

D. PC gaming is distinct from console and mobile gaming

61. The overall video game industry is segmented based on device type because PCs, consoles, and mobile devices have distinct characteristics that offer distinct gaming experiences and attract distinct customers or distinct types of gameplays at different price points. There are also meaningful distinctions in game development and production among the three segments. A discussion of these distinctions in the context of PC gaming follows below.

Recognition of Market Segmentation

62. Segmentation of the overall gaming industry by type of gaming device is generally accepted and recognized among industry participants and analysts. For example, consumer and

[50] https://www.gameopedia.com/the-history-evolution-and-future-of-mobile-gaming/.

industry/market data providers such as Newzoo, Ampere, and IDG typically provide data and analyses such as consumer behavior, market trends, and industry forecasts separately for each of the three device types.[51]

63. Various governmental entities have also recently considered the segmentation of the broader video game industry when examining Microsoft's proposed acquisition of Activision. In its effort to block the transaction, the United States Federal Trade Commission ("FTC") has taken the position that "High-Performance Consoles" (*i.e.*, Microsoft's Xbox and Sony's PlayStation) are distinct from both PC and mobile gaming.[52] In support of its position, the FTC stated that "industry participants treat PC gaming as a separate segment from console gaming." In its preliminary injunction opinion, the United States District Court for the Northern District of California, agreed that "the console market does not include PCs," and noted "[t]hat consumers may 'cross-shop' between consoles and PCs does not demonstrate 'reasonable interchangeability of use or the cross-elasticity of demand between the product itself and substitutes for it.'"[53]

64. The United Kingdom Competition and Markets Authority ("CMA") also considered Microsoft's proposed acquisition of Activision and determined that it would "not include mobile devices in the same product market as consoles," and would "not include PCs in the product market

[51] See, for example, https://newzoo.com/games-market-reports-forecasts (Newzoo enables readers to "[a]ccess the key games market numbers from 2015 to 2026: revenues players, payers per region and market, split across PC, console, and mobile."); https://www.ampereanalysis.com/products/about/games-markets (Ampere reports "[s]pend on games content and services across console, PC, mobile, & cloud"); and https://www.idgconsulting.com/idgsubscriptionresearch (IDG offers publications consisting of video game and esports "Industry Forecast Updates on PC, Console, and Mobile…").

[52] *In the Matter of Microsoft Corp. and Activision Blizzard, Inc.,* United States Federal Trade Commission Office of Administrative Law Judges, Docket No. 9412, Complaint Counsel's Corrected Pre-Trial Brief, October 2, 2023, pp. 8–11. The FTC has also taken the position that "High-Performance Consoles" are differentiated from the Nintendo Switch console.

[53] *FTC v. Microsoft Corp.*, Case No. 23-cv-02880-JSC, Document 305, p. 28.

with consoles…"[54] In the European Commission's ("EC") consideration of the same transaction, it decided that development, publishing, and distribution of mobile games does not belong in the same product market as the development, publishing, and distribution of PC and console games, respectively.[55] The EC did not decide if segmentation based on device between PC and console was appropriate, because it determined that such segmentation would not impact the outcome of the analysis given the specific facts of the proposed transaction.[56]

65. The fact that Valve only sells PC game products and services, and not console or mobile game products or services, also indicates that PC, console, and mobile gaming are distinct segments. [redacted]."[57] Similarly, in opposition to Apple's subpoena in its dispute with Epic Games, Valve repeatedly asserted that it did not compete in the mobile gaming segment. For example, Valve stated that it "does not make or sell phones, tablets, or video games for mobile devices, or otherwise compete in the mobile market. Valve also operates Steam, an online platform that lets users purchase and play PC games on their laptops and desktops. Steam users cannot buy

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54 CMA Final Report, *Anticipated Acquisition by Microsoft of Activision Blizzard, Inc.*, April 26, 2023, pp. 55-60. In its Final Report, the CMA noted that testimony and evidence indicated that Microsoft considers PC, console, and mobile separately (¶¶5.39 and 5.47(b)).

55 EC Decision, *Microsoft / Activision Blizzard*, Case M.10646, May 15, 2023, pp. 17-18, 26.

56 EC Decision, *Microsoft / Activision Blizzard*, Case M.10646, May 15, 2023, pp. 17-18, 26.

57 VALVE_ANT_2710947 to VALVE_ANT_2710954 at VALVE_ANT_2710951.

or use mobile apps on Steam."[58]

Different Characteristics and Use Cases

66. PCs, consoles, and mobile devices are all unique devices with their own features, capabilities, advantages, and disadvantages. According to the FTC:[59]

> [PCs] possess different characteristics and uses than High-Performance Consoles. Most PCs are general-purpose devices that cannot play the type of computationally demanding and graphically intensive games that High-Performance Consoles can. Even gaming PCs, which are more advanced, provide a differentiated experience from High Performance Consoles. The degree of customization for gaming PCs requires a higher level of technical sophistication than for consoles.

67. As the FTC pointed out, PCs (and mobile devices) are general-purpose devices offering numerous functions and experiences, whereas consoles are dedicated devices designed primarily for the single function of playing video games. PC gaming is also hardware agnostic. That is, a PC game will generally run on any PC that meets the game's hardware and software requirements. Console games, on the other hand, are designed to work on a specific console. A consumer cannot purchase an Xbox game and expect to play that game on a PlayStation or Nintendo console. Similarly, backwards compatibility is more common in PC games than in console games, allowing PC players to continue enjoying older PC games after upgrading their device.

68. There is also a larger selection of video games for PC and mobile devices compared to

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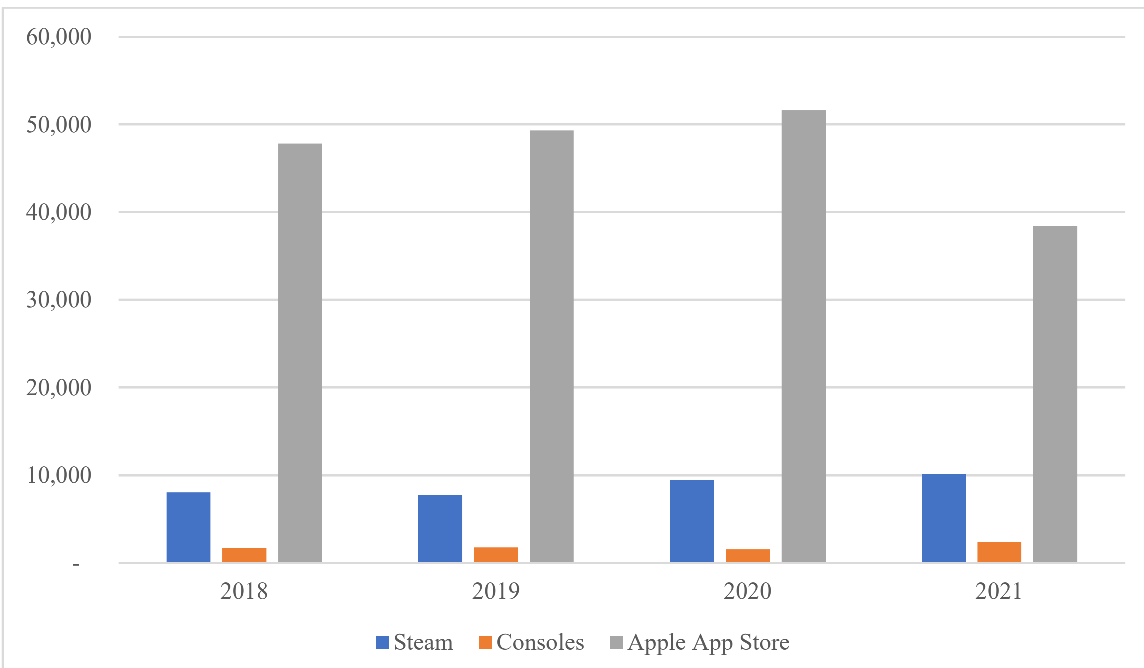
[58] Valve reiterated its position that it does not compete in mobile gaming several times in its objections to Apple's subpoena, stating (1) "Valve does not compete in the mobile app market at issue." (2) "Apple, Google and Samsung compete with each other in the mobile app market. Valve does not compete in that market." and (3) "Somehow, in a dispute over mobile apps, a maker of PC games that does not compete in the mobile market or sell 'apps' is being portrayed as a key figure. It's not." *Epic Games, Inc. v. Apple Inc.*, Case No. 4:20-cv-05640-YGR, Document 346, pp. 5-7.

[59] *In the Matter of Microsoft Corp. and Activision Blizzard, Inc.,* United States Federal Trade Commission Office of Administrative Law Judges, Docket No. 9412, Complaint Counsel's Corrected Pre-Trial Brief, October 2, 2023, pp. 30-31.

consoles. It is generally estimated that there are between 500 and 2,000 new games released on each major console every year.[60] In contrast, more than 10,000 PC games have been released on Steam alone in each of the last three years. Mobile devices have seen even greater supply of video games, with around between 40,000-50,000 games published each year on Apple's App Store alone. Figure 3 below illustrates the number of new games released on Steam compared to estimates of new games released on major consoles (*i.e.*, Xbox, PlayStation, and Nintendo Switch) and the Apple App Store from 2018 through 2021.

Figure 3. Estimated Annual New Games Released on Steam, Consoles, and the Apple App Store[61]



60 https://arstechnica.com/gaming/2022/02/fewer-and-fewer-console-games-are-seeing-a-physical-release/.

61 Data compiled from *SteamSpy.com*; https://www.pocketgamer.biz/metrics/app-store/submissions/; https://arstechnica.com/gaming/2022/02/fewer-and-fewer-console-games-are-seeing-a-physical-release/. Arstechnica relied on U.S. data from NPD for the number of games released on consoles, while Steam Spy and Pocket Gamer report the number of games on Steam and the Apple App Store worldwide. Despite the regional differences in the data, it appears that there are little/no regional restrictions for U.S. players on Steam. According to Valve, "[i]n most cases, there are no region restrictions on products purchased directly from the Steam store." See, https://help.steampowered.com/en/faqs/view/58D3-B80D-2943-3CC6. The numbers for

69. The volume of PC and mobile games released each year far exceeds the volume of console games released in part because PCs and mobile devices are much more accessible platforms for developers. The barriers to entry for developers of console games, such as SDKs, certifications, strict quality controls, and other requirements for publishing and distributing games in "walled garden" console ecosystems, do not exist for PC developers distributing games through digital platforms like Steam.[62]

70. Another significant difference between PCs, consoles, and mobile devices is the user input options for each device. As discussed above, the typical input option for a PC is a keyboard and mouse, which enthusiast gamers (sometimes referred to as "hardcore gamers") often consider to be superior to console controllers because of the relatively large selection of potential inputs (*i.e.*, 100+ keys). More casual players may prefer the simplicity of console controllers or the touchscreen on a mobile device. PCs also support a wider variety of other gaming peripherals, including virtual reality headsets, flight sticks, headsets, monitors, and racing wheels.

71. The wide availability of PC game "mods" is another characteristic distinguishing PC gaming from console gaming. A "mod" is a modification or alteration to a particular game's content, which may include alterations to graphics, gameplay mechanics, audio, or even the creation of entirely new content such as levels, characters, or quests. Game mods are often created by developers who were not involved in the creation of the original game, usually as a hobby or passion project rather than as a profit-seeking pursuit,[63] and are typically offered free to players

console include both physical and digital game releases.

62 "State of the Game Industry 2021," GDC, 2021, p. 5.

63 https://store.steampowered.com/about/communitymods/#:~:text=Unless%20specifically%20stated%20otherwise%2C%20mods,their%20games%20to%20support%20them.

through websites or platforms such as *ModDB.com, NexusMods.com,* or Steam Workshop.[64] Given the relatively low barriers to developing and publishing mods for PC games, the PC versions of a popular cross-platform game tend to have more mods available than the console versions of the same game. Thus, PC mods may offer PC players access to an array of ancillary content that can add depth and variety to games that is not available to console players. This can increase the longevity and popularity of the PC version of games, relative to the console versions of the same games, and breathe new life into older PC titles.

Different Players and Gameplay Experiences

72. When considering the type of player that uses each type of device, it is important to recognize that the technical know-how required to operate games on the three types of devices generally increases from a low-level of technological sophistication required to operate mobile devices to an increased level for consoles and a relatively high level for gaming on PCs. In other words, it is more likely that a PC player could pick up a new mobile device and easily understand how to launch and play a game than vice versa. Thus, larger portions of the U.S. and worldwide populations are mobile game players than console or PC game players.

73. According to a 2022 Newzoo survey, 72% of the total online U.S. population are "game enthusiasts."[65] Newzoo defines game enthusiasts as "consumers who engage with gaming through playing, viewing, owning, and/or social behavior."[66] The same survey found that 48% of the total U.S. online population plays games on mobile, while 39% and 27% of the total U.S. online

64 https://www.moddb.com/; https://www.nexusmods.com/; https://steamcommunity.com/workshop/.

65 "Key Insights Into American Gamers," Newzoo, 2022, p. 8.

66 "Key Insights Into American Gamers," Newzoo, 2022, p. 8.

population play games on consoles and PCs, respectively.[67] The ESA indicated that 64% of video game players in the United States used mobile devices in 2023, compared to 54% that used consoles, and 45% that used PCs.[68] Although polling a different base, like the Newzoo data, the ESA data indicates that a larger portion of players use mobile devices than consoles and PCs, and that a larger portion of players use consoles than PCs. Furthermore, given that the sum of the percentages is greater than 100%, both the Newzoo and ESA data indicate that some players use multiple device types (*i.e.*, multi-home) to play video games.

74. In addition to a player's technological sophistication, gameplay experience preferences also contribute to a player choosing to play on a single type of device or multi-home across device types. For example, it is generally understood that PCs are better for heavier, more involved players than consoles because, in part, of the ability to customize PCs. As discussed above, PCs offer video game players the ability to customize their PC with third-party components to enhance performance speeds, graphics, and memory. PC game players can enhance their hardware whenever necessary instead of waiting years for a new generation of device. On the other hand, consoles require minimal setup, allowing users to simply "plug-and-play." Thus, more casual game players tend to prefer consoles over PCs. According to the FTC, the fact that the degree of customization for gaming PCs requires a higher level of technical sophistication than for consoles "results in a different audience for high-end PC gaming than console gaming." Furthermore, PC game players also tend to appreciate that keyboards and mice offer many more input options compared to console controllers, enabling more effective and competitive gameplay on PCs.

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67 "Key Insights Into American Gamers," Newzoo, 2022, p. 12.

68 "Essential Facts About the Computer and Video Game Industry," Entertainment Software Association, 2023, p. 5.

75. Similarly, the environment around each device during gameplay typically differs depending on the device type being used. A PC and its peripherals (*e.g.*, monitor, keyboard, speakers, *etc.*) generally require more space to operate. Thus, players often design their PC gaming setup around a desk, requiring a more upright player position during gameplay. Whereas consoles connected to a television are often played from the comfort of a couch or lounge chair. These differences, while not always the case, add to the general understanding that PCs facilitate more involved and competitive gameplay, whereas consoles facilitate more casual and relaxed gameplay. Mobile devices provide an entirely different gaming environment—one that is generally on-the-go and/or play sessions that occur in relatively shorter durations.

76. Given the differences in gameplay experiences and input options, PCs are generally preferred over consoles for certain game genres, and vice versa. For example, as discussed above, the enhanced control and flexibility of a mouse and keyboard can be especially beneficial when playing MMORPGs such as *World of Warcraft* and RTS games such as *Age of Empires*. For similar reasons, relatively competitive players typically consider PCs as the superior device for playing first-person shooter games such as *Call of Duty*. On the other hand, players typically prefer the console gaming experience for sports and fighting games because they lend themselves well to in-person social play, the rumble function of controllers, and exclusive releases. Mobile devices are best for simple games with short play sessions. In fact, it is suggested that some mobile games, such as *Angry Birds*, became successful because of the unique gameplay experience had on mobile devices that allow players to provide input by swiping their fingers across a touchscreen.[69]

[69] See, for example., van Dreunen, Joost, *One Up: Creativity, Competition, and the Global Business of Video Games*, Columbia Business School Publishing (2020), Ch. 8. "*Angry Birds* provided a clever way to showcase the device's features, and with Apple's help, it quickly became one of the iPhone's most notable titles. Designed to be easily recognizable, requiring no tutorial, offering self-explanatory game mechanics and short

Different Price Points

77. Another distinction between PCs, consoles, and mobile devices from a game player's perspective is the affordability of games. Mobile devices, while expensive, are more commonly owned by consumers for numerous functions other than gaming. Thus, the price a consumer pays for a mobile device is generally not driven by the desire to use the device for mobile gaming. Although PCs are also general-purpose devices, it is common for serious game players to purchase high-end PCs that are used primarily, or exclusively, for gaming. According to the FTC, "high-end gaming PCs are generally more expensive than High-Performance Consoles with gaming PCs retailing anywhere from $800 to more than $2,500."[70] In contrast, the most popular consoles at the time of this report are retailing for less than $600.[71]

78. Video games, particularly games with high production value (*e.g.,* AAA games), are priced close/competitively across PCs and consoles upon release. However, as discussed above, there are significantly more PC games than console games. Thus, PCs offer more low-priced, indie games and free-to-play games than are available for consoles. Mobile games are almost entirely free to play, with options for in-game purchases for more serious, competitive players.

Differences in Game Production

79. There are also meaningful differences in game production between the PC, console, and

play sessions, and appealing to a worldwide audience because of the deliberate absence of language, Angry Birds grew to become a massive hit."

70 *In the Matter of Microsoft Corp. and Activision Blizzard, Inc.,* United States Federal Trade Commission Office of Administrative Law Judges, Docket No. 9412, Complaint Counsel's Corrected Pre-Trial Brief, October 2, 2023, p. 31.

71 The Xbox Series X was selling for $469.99 as of January 2024. See https://www.xbox.com/en-US/consoles/all-consoles#shop. The PlayStation 5 was selling for $499.99 as of January 2024. See https://direct.playstation.com/en-us/buy-consoles/playstation5-console-model-group-slim?smcid=pdc:us-en:web-pdc-ps5:subnav-Buy%20now:null.

mobile that distinguish the three segments. Just as consumers cannot play a console or mobile version of a game on a PC, developers cannot release a single version of a game that is compatible with all three device types. They must create different game versions for each respective type of device (*i.e.*, console versions, mobile versions, and a PC version).[72] This requires familiarity of the requirements and development tools associated with each device. Thus, many smaller studios tend to specialize in offering games for one type of device, while larger publishers tend to be active across all three types of devices. For example, larger publishers like Activision, T2, and EA each offer games across all three device types, whereas smaller developers like Lo-Fi Games, InnoGames, and Wolfire may only develop games for PCs and/or mobile devices.[73]

80. Relative to PC and mobile, the console segment has higher barriers to entry for game developers. Console manufacturers exercise tight control over game development, requiring that developers acquire and maintain a license to develop games for their consoles. Console manufacturers are more selective in the games they allow to be published for their platforms, and establish and maintain high development standards, which generally results in higher quality standards than in PC game development. To offer games on a particular console, developers also require the SDK specific to that console. These requirements generally necessitate larger minimum development budgets for console games relative to PC or mobile games. For this reason, console game development tends to be larger in scope than PC or mobile game development.

81. Certain aspects of the game development process are also unique to PC games. For

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72 In the case of console and mobile, developers must also create versions of games specific to each console platform it will be available on (*i.e.*, Xbox, PlayStation, and Switch) and mobile platforms (*i.e.*, iOS, and Android). For PC games, however, a single version of a game can be distributed across different digital platforms by applying "wrappers" that are unique for each platform.

73 https://lofigames.com/about/about-us/; https://www.innogames.com/company/about-us/; https://www.wolfire.com/.

example, given the great degree of variation among PC gaming hardware, game developers must ensure that their games can operate across a larger range of specifications to accommodate the numerous different PC builds that their game will be played on. This is distinct from developing console games (but somewhat like developing mobile games, especially for Android devices), in which the developer will generally work with each console manufacturer to ensure that games meet specific requirements for the console.

82. Game development for mobile devices can be significantly different from both PC and console game development because of the differences in device hardware, target audience, gameplay scenarios, and input differences (touchscreen instead of buttons on a controller, mouse, or keyboard). Mobile games are typically designed for smaller screens and shorter gameplay sessions. For this reason, many mobile game developers create games with levels that can be completed in minutes. Mobile video games are generally considered to be easier and cheaper to develop than PC or console video games.[74] Mobile game developers must also account for the monetization models that are more prevalent among mobile games. As discussed above, mobile video games are more likely to be free-to-play with in-app purchases or in-game advertising. Thus, developers of mobile games are often focused on finding ways to balance encouraging in-app purchases and incorporating advertisements while minimizing degraded gameplay experience.

VIII. DIGITAL DISTRIBUTION OF PC GAMES

83. Prior to the emergence of digital distribution, most PC games were distributed physically via CD-ROM. Physically distributed PC games reached the peak of their popularity in the mid to

[74] For example, Starloop Studios, a video game developer for mobile, PC, and console games, stated that the costs of developing mobile video games "range from $3,000 for simple mini-games to $150,000 for more complex, multi-player games." https://starloopstudios.com/mobile-game-development-cost/.

late-1990s. As of 1995, only 14% of U.S. adults had internet access,[75] and no major platform for the digital distribution of PC games existed.

84. The shift to digital distribution in the PC industry largely began with Valve's Steam, along with improvements to high-speed internet. Steam launched in 2003 and was opened to third-party games in 2005. Other digital distribution platforms for PC games started operations around the same time, including Direct2Drive (2004), GamersGate (2006), Games for Windows – Live (2007), Good Old Games ("GOG") (2008), Impulse (2008), and Green Man Gaming (2010).[76] The shift to digital distribution reduced entry barriers for smaller PC game developers and expanded the supply of games available to PC game players.

85. As of the time of this report, nearly all PC games are distributed on a digital platform.[77] Like Steam, some distribution platforms were introduced by large developers/publishers to distribute, sell, host, and/or launch the games of other developers/publishers in addition to their own games. Other distribution platforms have been launched by developers/publishers to extend the reach of their own catalog of proprietary games. Additionally, a few select games have become their own platform on which players can develop and distribute player-generated content.

75 https://www.pewresearch.org/internet/2014/02/27/part-1-how-the-internet-has-woven-itself-into-american-life/.

76 https://www.ign.com/articles/2004/09/10/ign-entertainment-launches-direct2drive; https://www.pcgamingwiki.com/wiki/Store:GamersGate; https://www.ign.com/articles/2007/03/14/microsoft-announces-games-for-windows-live-details; https://www.shacknews.com/article/54545/good-old-games-launches-public; https://web.archive.org/web/20080708091849/http://tgnforums.stardock.com/315290; https://www.greenmangaming.com/blog/green-man-gamings-first-year-a-birthday-story/.

77 For example, a December 2020 article by Game Rant, citing to Newzoo, states, "The vast majority of PC gaming has been digital for a long time through sites like GOG, Steam, and dev-specific stores like the Epic Games Store. Only about 2% of its revenue came from boxed PC games [in 2020]." https://gamerant.com/2020-game-industry-revenue-digital/.

A. Third-party PC game distribution platforms

86. The digital distribution platforms discussed in this section are distinct in that they distribute, sell, host, and launch PC games from third-party developers/publishers along with their own titles. When selling access to third-party games, digital distribution platforms typically generate revenue by charging the developer/publisher a commission fee for the distribution service. Third-party PC game distribution platforms attempt to compete for games by offering different fee structures, upfront payments, favorable marketing, large and/or unique user bases, and functionality for both developers and consumers to take advantage of, among other incentives. In addition to Steam, which I discuss in more detail in Section IX, major third-party PC game distribution platforms include the Epic Games Store and GOG.[78]

i. Epic Games Store

87. The Epic Games Store launched in December 2018 by developer/publisher Epic Games.[79] Prior to the launch of the Epic Games Store, Epic Games was known for its development of highly successful games, such as *Fortnite* and *Gears of War*, and for its creation of the widely used game development software Unreal Engine. Epic Games stated that its goal with the Epic Games Store was to provide players with better games and allow developers to keep more of the revenue their games generated (88% rather than 70% on Steam).[80]

88. Epic Games claimed that its store would help developers succeed and make more games that players love.[81] In addition to letting developers keep more of the revenues their games

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78 Additional examples of third-party PC game distribution platforms operating as of the time of this report include the Microsoft Store, Itch.io, Robot Cache, and Game Jolt.

79 https://store.epicgames.com/en-US/news/the-epic-games-store-is-now-live.

80 https://store.epicgames.com/en-US/news/the-epic-games-store-is-now-live.

81 https://store.epicgames.com/en-US/news/the-epic-games-store-is-now-live.

generated, Epic Games offered select developers guaranteed upfront payments for exclusive titles released on its platform.[82] In its "Epic Games Store 2022 Year in Review," Epic Games announced that its distribution platform was home to over 230 million players and that players spent $820 million on its platform, including $355 million on third-party applications.[83] The Epic Games Store attempts to attract players by offering free games and timed exclusives,[84] which are games that are launched on only one third-party distribution platform for a negotiated period before the publisher makes them available on other third-party distribution platforms at a later date. In August 2023, Epic Games announced its Epic First Run program which offers developers 100% of game revenues for the first six months of the games' exclusive launch on the Epic Games Store.[85]

89. Despite its large number of registered users, reports suggest that the Epic Games Store has yet to become profitable.[86] In September 2023, Epic Games announced that it would be laying off 16% of its employees, claiming that the company has been "spending way more money than we earn."[87] That the Epic Games Store is not profitable is indicative of Epic Game's attempts to subsidize the developer side of the platform through 100% revenue guarantees and fee rebates on the royalty charged for use of the Unreal Engine development tool for sales on the Epic Games Store.[88]

82 https://arstechnica.com/gaming/2021/04/how-long-can-epic-afford-to-throw-money-at-the-epic-games-store/; See, for example, the email exchange between developer Hi-Rez Studios and Valve, Exhibit 95 to the Deposition of Nathaniel Blue, October 4, 2023.

83 https://store.epicgames.com/en-US/news/epic-games-store-2022-year-in-review.

84 https://store.epicgames.com/en-US/news/the-epic-games-store-is-now-live.

85 https://store.epicgames.com/en-US/news/introducing-the-epic-first-run-program.

86 https://www.ign.com/articles/the-epic-games-store-still-isnt-profitable-nearly-five-years-after-launch.

87 https://www.epicgames.com/site/en-US/news/layoffs-at-epic.

88 https://www.unrealengine.com/fr/blog/announcing-the-epic-games-store#:~:text=Epic%20takes%2012%25.,%2C%20out%20of%20Epic%27s%2012%25.&text=People%20who%20buy%20your%20games,and%20news%20about%20upcoming%20releases.

ii. GOG

90. GOG, formerly known as Good Old Games, launched in September 2008 by developer CD Projekt Red.[89] CD Projekt Red is known for developing games such as *The Witcher* and *Cyberpunk 2077*.[90] Though it does offer select new game releases, GOG's focus and key differentiator from other third-party PC game distribution platforms is offering players access to old, iconic games free of digital rights management.[91]

91. In 2013, when GOG first launched its indie game portal, it was reported that the company's revenue share model would be similar to Steam at a 70/30 share.[92] GOG also offered developers an advance on royalties for future sales with a 60/40 revenue share model until the advance had been repaid.[93] In 2021, it was reported that GOG.com was losing money and would begin focusing on offering a handpicked selection of games.[94] In May 2023, CD Projekt Red released a blog post containing GOG's "facts and numbers" for 2022.[95] The company reported that its "active users of all GOG services" grew 11% from the previous year and that GOG had a $1.2 million net profit in 2022.[96]

iii. Failed third-party PC game distribution platforms

92. As discussed above, around the time that Valve began distributing third-party games on

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89 https://www.shacknews.com/article/54545/good-old-games-launches-public.

90 https://www.cdprojektred.com/en/our-games.

91 https://www.gog.com/en/good-old-games.

92 https://www.engadget.com/2013-08-20-gog-com-launches-indie-game-portal-that-could-compete-with-the-m.html.

93 https://www.engadget.com/2013-08-20-gog-com-launches-indie-game-portal-that-could-compete-with-the-m.html.

94 https://www.theverge.com/2021/11/29/22808199/cd-projekt-gog-losses-restructuring-earnings-2021.

95 https://www.gog.com/en/news/gog_2023_update_2_facts_and_numbers_of_2022_copy3?cjdata=MXxOfDB8WXww&utm_campaign=cj&utm_medium=affiliate&utm_source=cj&r=true.

96 https://www.gog.com/en/news/gog_2023_update_2_facts_and_numbers_of_2022_copy3?cjdata=MXxOfDB8WXww&utm_campaign=cj&utm_medium=affiliate&utm_source=cj&r=true.

Steam, several other third-party PC game distribution platforms also existed. However, these platforms realized little success and have since been shut down or have no meaningful presence in the digital PC game distribution industry. Three examples of such failed platform follow:

- Impulse – In 2008, Stardock, a video game developer and publisher introduced its third-party digital distribution platform called Impulse.[97] In 2009, Stardock founder and CEO Brad Wardell estimated that Steam had 70% of the overall digital distribution market, while Impulse was in second place with 10% of the market.[98] In 2011, physical retailer GameStop purchased Impulse from Stardock and eventually rebranded the platform as "GameStop PC Downloads."[99] In 2014, GameStop discontinued its PC game downloading client and shifted to selling game keys that are redeemable on other PC game distribution platforms such as Steam.[100]
- Direct2Drive – In 2004, online media publisher IGN Entertainment launched a third-party digital distribution platform for PC games called Direct2Drive.[101] The service was popular in its early years and considered one of the few competitors to Steam. In 2011, GameFly, who offered a video game rental service, acquired Direct2Drive, which had more than 3,000 PC and Mac titles at the time, and rebranded it as "GameFly Digital."[102] AtGames then purchased the service in 2014 and relaunched it under the original Direct2Drive brand.[103] As of the time of this report, it is difficult to find any information about Direct2Drive. It appears that the service no longer exists.[104]
- Discord Store – In 2018, Discord, a popular chat platform, launched its own digital distribution platform for PC games called "Discord Store."[105] Two months later, the company announced that it planned to offer developers a 90% share of revenues when its PC game distribution platform opened up to all developers in 2019.[106] Discord's CEO Jason Citron stated, "[t]urns out, it does not cost 30 percent to distribute games in 2018…After doing some research, we discovered that we can build amazing developer

97 https://web.archive.org/web/20080708091849/http://tgnforums.stardock.com/315290.

98 https://www.gamedeveloper.com/game-platforms/stardock-reveals-impulse-steam-market-share-estimates.

99 https://news.gamestop.com/news-releases/news-release-details/gamestop-announces-acquisition-spawn-labs-and-agreement-acquire; https://www.gamespot.com/articles/buying-pc-games-from-gamestop-just-got-easier/1100-6419761.

100 https://www.gamespot.com/articles/buying-pc-games-from-gamestop-just-got-easier/1100-6419761/.

101 https://www.ign.com/articles/2004/09/10/ign-entertainment-launches-direct2drive.

102 https://www.prnewswire.com/news-releases/gamefly-inc-acquires-direct2drive-from-ign-entertainment-122580393.html; https://www.gamedeveloper.com/business/direct2drive-is-back-under-new-owner-gamefly-digital-is-no-more.

103 https://www.savingcontent.com/2014/11/07/atgames-is-relaunching-direct2drive-starting-this-weekend/.

104 https://www.direct2drive.com/#!/pc.

105 https://www.theverge.com/2018/10/16/17980810/discord-digital-game-distribution-store-steam-competitor-nitro-subscription-service.

106 https://www.theverge.com/2018/12/14/18139843/discord-pc-games-store-revenue-split.

tools, run them, and give developers the majority of the revenue share."[107] However, in March 2019, Discord removed the store tab from its platform and replaced it with the company's Nitro gaming subscription.[108] Shortly afterwards, Discord shut down the Nitro gaming platform.[109]

- EA's Origin and Ubisoft's Uplay – EA and Ubisoft, both major video game publishers, attempted to distribute third-party PC games through their digital distribution platforms. However, these platforms have since been replaced with or restructured as self-distribution platforms. See the discussion below for more details.

B. Self-distribution platforms

93. The digital distribution platforms discussed in this section are distinct in that they only distribute, sell, host, and launch PC games from their own catalog. It is worth noting that some digital distribution platforms attempted to offer games from third-party developers/publishers at some point in their histories but do not appear to do so at the time of this report. Major PC self-distribution platforms include Ubisoft Connect, EA Play, Battle.net, and popular games that have become platforms in their own right.[110]

i. Ubisoft Connect

94. Ubisoft, a major PC video game publisher known for its *Far Cry* and *Assassin's Creed* game franchises, launched its PC digital distribution platform called Uplay in 2012.[111] At the time, Uplay allowed players to purchase and download Ubisoft's own PC titles. In February 2013,

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107 https://www.theverge.com/2018/12/14/18139843/discord-pc-games-store-revenue-split.

108 https://www.gamesindustry.biz/discord-game-store-refocuses-on-nitro-subscription-as-servers-allow-devs-to-sell-games-directly.

109 https://www.eteknix.com/discord-to-shut-down-its-nitro-gaming-platform-next-month/.

110 Additional examples of self-distribution PC game platforms operating as of the date of this report include the Rockstar Social Club, Feral, Wargaming.net, and Riot Games' PC client. Bethesda, the publisher of *The Elder Scrolls*, once had a digital distribution service for its PC games called Bethesda.net. However, in 2022, Bethesda announced that it would be shutting down its Bethesda.net launcher and transferring all user games to Steam. https://bethesda.net/en/article/2RXxG1y000NWupPalzLblG/sunsetting-the-bethesda-net-launcher-and-migrating-to-steam.

111 https://www.gamesindustry.biz/ubisoft-launches-uplay-pc-digital-distribution-platform.

Ubisoft announced that it would begin selling third-party games on Uplay in addition to its own catalog of games.[112] In 2019, Ubisoft stopped distributing its new games through Steam, initially claiming that Steam's business model was "unrealistic" and didn't "reflect where the world is today in terms of game distribution."[113] Instead, all new Ubisoft releases, including major titles such as *Tom Clancy's The Division 2*, would be sold on Uplay and the Epic Games Store.[114] However, in November 2022, Ubisoft began offering its games on Steam again.[115] *Tom Clancy's The Division 2* was released on Steam in January 2023.[116]

95. At some point, Ubisoft decided to merge Uplay with its loyalty program, Ubisoft Club, under one "ecosystem of players services for all Ubisoft games across all platforms" called Ubisoft Connect.[117] Ubisoft Connect offers a PC desktop app for PC players.[118] As of the date of the report, it appears that Ubisoft Connect only offers access to Ubisoft's own games. It is not clear when Ubisoft stopped offering third-party games on the Ubisoft Connect platform.

ii. Origin / EA App

96. In June 2011, EA, a major video game publisher known for popular franchises such as *Madden* and *The Sims*, announced the launch of its own digital distribution platform called Origin.[119] EA stated that Origin would give players "access to the best content EA has to offer,

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112 https://www.polygon.com/2013/2/19/4001836/ubisoft-uplay-shop-third-party-games-ea-origin-chris-early-interview.

113 https://www.gamespot.com/articles/ubisoft-explains-why-it-doesnt-release-games-on-st/1100-6469502/; https://www.nytimes.com/2019/08/27/business/steam-epic-games-store.html.

114 https://www.gamespot.com/articles/ubisoft-explains-why-it-doesnt-release-games-on-st/1100-6469502/; https://www.techradar.com/news/tom-clancys-the-division-2-isnt-coming-to-steam.

115 https://www.theverge.com/2022/11/21/23471589/ubisoft-return-steam-2022-assassins-creed-valhalla.

116 https://store.steampowered.com/app/2221490/Tom_Clancys_The_Division_2/.

117 https://ubisoftconnect.com/en-US/faq/.

118 https://ubisoftconnect.com/en-US/faq/.

119 https://www.thegamer.com/best-selling-ea-franchises-ranked/; https://www.ea.com/news/electronic-arts-launches-origin.

across multiple platforms, anytime you want."[120] Moreover, in October 2011, EA announced the introduction of third-party games to Origin, including games from major publishers such as Warner Bros. Interactive Entertainment, THQ, and Capcom Entertainment, Inc.[121] Around that time, EA stopped releasing its new games through Steam.[122] EA sought to attract players to its distribution platform by offering exclusive games, free game downloads, and a subscription service.[123] However, in October 2019, EA announced that it had once again partnered with Steam.[124] Not only would EA once again release its new games through the Steam platform, it would also be giving Steam users access to its EA Access subscription service, the first and only subscription service available on Steam at that time.[125]

97. In June 2022, EA announced that it would no longer sell third-party games on Origin.[126] Soon after, in October 2022, EA announced that it would be replacing Origin with a new platform called the EA App from which players can download and play EA games.[127]

iii. Battle.net

98. Battle.net was originally launched in 1996 as an online gaming service for games developed by Blizzard Entertainment ("Blizzard"), such as *Diablo* and *World of Warcraft*.[128] In

120 https://www.ea.com/news/electronic-arts-launches-origin.

121 https://www.ea.com/en-ca/news/origin-expands-to-offer-games-from-third-party-publishers.

122 https://arstechnica.com/gaming/2019/10/so-long-origin-ea-comes-back-to-steam-with-new-games/.

123 https://arstechnica.com/gaming/2016/01/ea-launches-5month-subscription-plan-to-access-vault-games/; https://mcvuk.com/business-news/ea-we-want-to-regain-the-trust-of-pc-gamers/; https://www.ea.com/en-au/news/ea-launches-origin.

124 https://www.ea.com/news/ea-and-valve-partnership?utm_campaign=ea_hd_ww_ic_ic_twt_steam-10292019-tw&utm_source=twitter&utm_medium=social&cid=61082&ts=1572359496439.

125 https://www.ea.com/news/ea-and-valve-partnership?utm_campaign=ea_hd_ww_ic_ic_twt_steam-10292019-tw&utm_source=twitter&utm_medium=social&cid=61082&ts=1572359496439.

126 https://www.ea.com/ea-pc-third-party-titles-2022.

127 https://www.ea.com/en-gb/news/ea-app; https://www.pcmag.com/news/electronic-arts-waves-goodbye-to-origin-replaces-it-with-the-ea-app. Origin is still available for Mac users. https://www.ea.com/ea-app.

128 https://www.activisionblizzard.com/who-we-are.

2008, Blizzard merged with Activision, known for games such as *Call of Duty* and *Tony Hawk's Pro Skater*, to form Activision Blizzard.[129] Today, Battle.net is a desktop app that players can use to access and play PC games offered by Activision Blizzard.[130] Battle.net is also available for Mac and mobile devices.[131] Previously, both Activision and Blizzard attempted to distribute new games exclusively through Battle.net but have since returned to releasing many new games through Steam, including major titles such as *Overwatch 2* and *Call of Duty: Modern Warfare 2*.[132]

iv. Games with their own platforms

99. *Roblox*, *Minecraft*, and *Fortnite* are distinct in that they encourage players to develop and distribute content and have each amassed an extremely large user base. All three encourage social interaction and creativity in their gameplay, and can be downloaded to PCs, consoles, and mobile devices. The emphasis on player-generated content and the massive user bases *Roblox*, *Minecraft*, and *Fortnite* have amassed enabled these games to effectively become their own platforms through which the player-generated content is developed and distributed. The content generated for these games is exclusive to them; the content is developed by specialist creators with the help of tools that are made specifically for these games. The content can only be sold and consumed within these games. Instances where games effectively become their own platform are extremely rare among PC video games and far from the norm in the PC game development industry.

100. *Roblox* launched in 2006 and is a collection of more than 50 million games, all created by *Roblox* players on the *Roblox* platform using the Roblox Studio software.[133] Ten years after its

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129 https://www.activisionblizzard.com/who-we-are.

130 https://download.battle.net/en-us/desktop.

131 https://download.battle.net/en-us/desktop.

132 https://www.ign.com/articles/blizzard-games-are-coming-to-steam-starting-with-overwatch-2; https://www.eurogamer.net/five-years-later-call-of-duty-returns-to-steam-with-modern-warfare-2.

133 https://www.theguardian.com/games/2019/sep/28/roblox-guide-children-gaming-platform-developer-

launch, it was reported that *Roblox* had more than 30 million monthly active users.[134] At the time, Roblox's CEO Dave Baszucki stated that *Roblox* was "growing consistently at over 50 percent year-on-year…our MAU growth is over three times each year."[135] It was also reported that the top game creators for *Roblox* were making more than $50,000 per month.[136] As of 2023, *Roblox* reported that it had over 70 million daily active users and approximately 3 million creators, some of which have their own studios for developing *Roblox* content.[137]

101. *Minecraft*, launched in 2009, is a game where players create and explore a 3-dimensional world made of blocks, sometimes referred to as a digital form of Lego bricks. If certain criteria are met, players can become "Minecraft Partners," allowing them to sell original user-created content on the Minecraft Marketplace, including skin packs, adventure maps, and mini games.[138] *Minecraft*, often reported to be one of the best-selling video games of all time, was purchased by Microsoft in 2014 for $2.5 billion.[139] Around that time, it was reported that more than 100 million people had downloaded *Minecraft*.[140] In October 2023, Mojang Studios, the creator of *Minecraft*, announced that more than 300 million copies of game had been sold to players globally.[141]

102. *Fortnite*, developed and published by Epic Games, was introduced in 2017 and is on a path

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minecraft-fortnite; https://www.cnn.com/cnn-underscored/electronics/what-is-roblox.

134 https://venturebeat.com/games/at-10-roblox-surpasses-30-million-monthly-users-and-300-million-hours-of-engagement/.

135 https://venturebeat.com/games/at-10-roblox-surpasses-30-million-monthly-users-and-300-million-hours-of-engagement/.

136 https://venturebeat.com/games/at-10-roblox-surpasses-30-million-monthly-users-and-300-million-hours-of-engagement/.

137 https://venturebeat.com/games/young-developers-are-gamings-rising-stars-on-roblox-the-deanbeat/.

138 https://www.minecraft.net/en-us/catalog; https://www.minecraft.net/en-us/catalog.

139 https://www.businessinsider.com/microsoft-buys-minecraft-2014-9.

140 https://www.businessinsider.com/microsoft-buys-minecraft-2014-9.

141 https://www.forbes.com/sites/britneynguyen/2023/10/16/minecraft-just-surpassed-300-million-sales-heres-the-only-video-game-still-beating-it/?sh=51440452db50.

similar to *Roblox* and *Minecraft* in terms of growth and user-generated content. *Fortnite* started as a game where players could build forts to protect themselves from monsters and then grew into a battle royale, last person standing format. By November 2018, the game had reached over 200 million players.[142] In December 2018, Epic Games introduced Fortnite Creative, a "new mode with more custom features, giving players the ability to design their own games…"[143] Like *Roblox* and *Minecraft*, third-party creators on *Fortnite* have generated significant revenues and started development studios dedicated solely to the development of *Fortnite* content.[144] In April 2022, Tim Sweeney, the CEO of Epic Games, stated that players spent approximately half of their play time in content created by third parties and the other half in content created by Epic Games.[145]

v. Other forms of self-distribution

103. Some developers, generally very small developers with a sustainable niche (*e.g.*, those selling mods of existing games), offer for free or sell games directly through their own website. However, many of these developers likely built their games with HTML5, allowing the game to run directly in a browser without the need for downloading first, such as *Wordle*.[146] Other developers sell game keys on their webstores allowing customers to access their products on a third-party distribution platform, similar to retailers discussed below.[147]

C. Retailers

104. The retailers discussed in this section are distinct from digital distribution platforms in that

142 https://variety.com/2018/gaming/news/fortnite-player-count-concurrents-1203037884/.
143 https://fortune.com/2018/12/05/fortnite-creative-mode/.
144 https://www.theverge.com/23139858/fortnite-creators-creative-studios-branded-worlds.
145 https://www.fastcompany.com/90741893/epic-games-ceo-tim-sweeney-talks-the-metaverse-crypto-and-antitrust.
146 See, for example, https://www.nytimes.com/games/wordle/index.html.
147 See, for example, https://www.justflight.com/.

they sell third-party PC games, but do not own a digital distribution platform from which the games are hosted or launched. Instead, retailers typically provide their customers with activation keys or game keys that are used to download games from digital distribution platforms. Thus, the retailer may sell the games, but customers are still downloading and accessing the game from digital distribution platforms, such as those discussed in the sections above. Major PC game retailers include Humble Bundle, Green Man Gaming, and GameStop.[148]

i. Humble Bundle

105. Humble Bundle launched in 2010 with "a single two-week Humble Indie [Game] Bundle."[149] A game bundle is typically a collection of video games that a player can access by paying the minimum suggested price within the period the bundle is available. The player has the option to pay higher amounts for additional content and/or to donate money to publishers, Humble Bundle, and a charity. It appears that Humble Bundle currently takes at least 15% of the amount paid and allows the player to split the remaining 85% between publishers, a charity, and Humble Bundle according to their own choosing.[150] For example, during December 2023, Humble Bundle was offering the "Happy Holidays With GOG RPGS" game bundle.[151] Under this bundle, players could access four games on GOG (with GOG game keys) by paying at least $8 or seven games on GOG by paying at least $12.[152] According to Humble Bundle, the total value of the games in the

148 Additional examples of PC game retailers operating at the time of this report include GamersGate, WinGameStore, Best Buy, Walmart, Amazon, 2Game, and Target.

149 https://www.humblebundle.com/about.

150 This is evidenced by the "Adjust Donation" tab on bundle purchase pages of the Humble Bundle website. See, for example, https://www.humblebundle.com/games/happy-holidays-with-gog-rpgs?hmb_source=&hmb_medium=product_tile&hmb_campaign=mosaic_section_1_layout_index_1_layout_type_threes_tile_index_2_c_happyholidayswithgogrpgs_bundle.

151 https://web.archive.org/web/20240110010518/https://www.humblebundle.com/games/happy-holidays-with- gog-rpgs?hmb_source=&hmb_medium=product_tile&hmb_campaign=mosaic_section_1_layout_index_1_layout_type_threes_tile_index_2_c_happyholidayswithgogrpgs_bundle.

152 https://web.archive.org/web/20240110010518/https://www.humblebundle.com/games/happy-holidays

bundle was $259.[153]

106. As of the date of this report, Humble Bundle sells ebooks, software, and other digital content in addition to games.[154] Humble Bundle's product offerings include bundles, individual content, and a subscription for games.[155] According to Humble Bundle, when a player purchases a game on Humble Bundle, the player will receive a key "to redeem on Steam, Ubisoft Connect Desktop App, GOG, or another platform."[156] As of December 2023, the company claims to have over 12 million customers worldwide and to have given over $240 million in proceeds to charities since 2010.[157]

ii. Green Man Gaming

107. Green Man Gaming is a digital storefront for PC and Xbox games that launched in May 2010.[158] Similar to Humble Bundle, players who purchase a game through Green Man Gaming receive a game key that can be activated on a PC game distribution platform. As of the time of this report, those platforms include Steam, Xbox, Ubisoft Connect, and the Epic Games Store, among others.[159] Green Man Gaming attempts to differentiate itself from other retailers and platforms by offering aggressive pricing and discounts, a rewards program, contests, giveaways, and pre-order releases.

-with- gog-rpgs?hmb_source=&hmb_medium=product_tile&hmb_campaign=mosaic_section_1_layout _index_1_layout_type_threes_tile_index_2_c_happyholidayswithgogrpgs_bundle.

153 https://web.archive.org/web/20240110010518/https://www.humblebundle.com/games/happy-holidays -with- gog-rpgs?hmb_source=&hmb_medium=product_tile&hmb_campaign=mosaic_section_1_layout _index_1_layout_type_threes_tile_index_2_c_happyholidayswithgogrpgs_bundle.

154 https://www.humblebundle.com/about.

155 https://www.humblebundle.com/about.

156 https://www.humblebundle.com/about.

157 https://www.humblebundle.com/about.

158 https://www.greenmangaming.com/blog/green-man-gamings-first-year-a-birthday-story/.

159 https://www.greenmangaming.com/all-games/drms/.

iii. GameStop

108. Founded in 1996, GameStop is a "global, multichannel video game, consumer electronics and collectibles retailer" with more than 5,700 brick-and-mortar retail locations across 14 countries as of the end of 2019.[160] GameStop claims to be the largest omnichannel video game retailer in the world, offering a place where players can purchase new or used games and trade-in their old games. As early as 2010, GameStop launched its online storefront which allowed players to purchase digital upgrades to their games.[161] By 2011, GameStop was allowing players to purchase full digital PC games at local GameStop stores.[162] As of the time of this report, GameStop offers a PC game store on its website where users can buy game keys to access games on Steam, the EA App, and Ubisoft Connect, among others.[163]

D. Multigame subscription models

109. Multigame subscription models allow players to pay a reoccurring fee for access to a catalog of video games. Publishers can participate in subscription services in which they make their game(s) available to players as part of a broader catalog. Although compensation structures vary, when publishers license their game(s) to PC game distribution platforms for inclusion in a multigame subscription service, they will commonly receive an upfront fee and a marginal royalty.[164] Games that are included in subscription offerings tend not to be the latest releases or

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160 GameStop Annual Report 2019, p. F-8.

161 https://www.hollywoodreporter.com/business/business-news/gamestop-offer-digital-downloads-91226/.

162 https://www.engadget.com/2011-08-02-gamestop-brings-digital-download-purchases-to-stores-thus-compl.html.

163 https://www.gamestop.com/digital-store/pc-digital-store/digital?start=0&sz=20.

164 See, for example, https://www.pcgamer.com/xbox-chief-reveals-more-about-how-developers-earn-money-through-game-pass/. Alternatively, publishers may be paid a wholesale price (per user) for inclusion in a subscription bundle which becomes payable once a user has crossed a certain threshold in terms of time spent on the game (*e.g.*, 1 hour).

most popular games, largely because the compensation structures offered to publishers for including games in subscription catalogs are less appealing to publishers for games with significant stand-alone sales potential. Distribution platforms offering multigame subscription services often include their own, first-party games in these services to increase their appeal to players.

110. Popular PC game subscription services through PC game distribution platforms include Microsoft's PC Game Pass, Ubisoft+, and EA Play. These subscription services typically charge a monthly or annual fee and, in addition to access to a catalog of games, provide players access to member rewards, savings, game trials, and premium editions, among other benefits.[165] Retailers may also offer subscription models, such as Humble Bundle's Humble Choice subscription service. Given that Humble Choice subscribers are provided access codes for games on PC game distribution platforms (such as Steam Keys for games on Steam), the subscribers retain access to the games they acquire during the subscription after it expires.[166]

E. Cloud gaming

111. The emergence of cloud gaming is a more recent element in the evolution of PC game distribution.[167] Sometimes called game streaming, cloud gaming enables players to access games on a device through a remote server, eliminating the need to download or install the game natively on a device. Gameopedia offers the following description to explain the difference between

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165 https://www.ea.com/ea-play; https://www.xbox.com/en-US/xbox-game-pass/pc-game-pass; https://www.humblebundle.com/membership; https://store.ubisoft.com/us/ubisoftplus.

166 https://www.humblebundle.com/membership; https://support.humblebundle.com/hc/en-us/articles/360037968813-Humble-Choice-Manage-Your-Membership#:~:text=You%20are%20welcome%20to%20cancel,you've%20already%20paid%20for.

167 For a more in-depth discussion of the current state of "cloud gaming," see Rietveld, Joost, *Cloud Gaming is Not a Distinct Market* (2023), which I prepared and submitted for the U.K.'s Competition and Markets Authority concerning its Microsoft / Activision Blizzard merger inquiry. https://assets.publishing.service.gov.uk/media/642e9e29fbe620000c17dde1/Cloud_gaming_Opinion_.pdf.

traditional gaming and cloud gaming:[168]

> When you usually play games, you download the game or (increasingly rarely) play it off a disc. The way your game looks and runs depends upon your device's processor and graphics card. With cloud gaming, you stream the game as a series of compressed video frames which react to your input. The game is running on a remote server that bears all processing load instead of your system. When you press a key for your character to move forward, this input gets sent to this server which tells the game what you pressed, then sends you a new video frame which shows you the result of your action.

112. Three potential benefits to cloud gaming from a player's perspective include (1) cloud gaming can alleviate the need to acquire high-powered, expensive hardware (*e.g.*, consoles or gaming PCs), (2) cloud gaming frees up memory space and reduces friction that players may experience when installing video games, and (3) cloud gaming allows players to access the same version of a game across a wide range of devices, including PCs, consoles, and mobile devices.

113. While the description and potential benefits (barring any input latency) of "cloud gaming" offered above are useful from a technological perspective, an examination of current and prior offerings reveals that there is significant ambiguity as to what exactly "cloud gaming" is in terms of how industry participants are making the technology available to consumers. There are meaningful and significant differences in the various ways industry participants have attempted to commercialize "cloud gaming," which include three distinct consumer-facing models: (1) cloud-gaming-as-a-feature, (2) cloud-gaming-as-platform, and (3) cloud-gaming-as-a-complement.[169]

114. Cloud-gaming-as-a-feature involves bundling cloud gaming with services provided by a consumer-facing distribution platform (*e.g.*, Microsoft's Game Pass and PlayStation Plus). Under

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168 https://www.gameopedia.com/cloud-gaming/.

169 Cloud-gaming-as-an-input has also been offered as a specialized business-to-business cloud streaming technology that can be recombined or rebranded by downstream business customers who present it as their own to their end customers (*e.g.*, Ubitus).

this model, most games offered by the platform are still run natively (*i.e.*, from the player's device), while a subset of the games are offered remotely through cloud streaming, typically as part of a premium subscription tier. Thus, players self-select into the cloud gaming offering. Generally, there are limited use cases for this form of cloud gaming. A console manufacturer, such as Sony or Microsoft, may offer cloud gaming as a feature to improve the backwards compatibility of its console without having to make hardware adjustments to new generation consoles.

115. Cloud-gaming-as-a-platform is a stand-alone service in which all games on the distribution platform are streamed from the cloud (*e.g.*, Amazon Luna and the defunct Google Stadia). These platforms are generally device agnostic, allowing players to access games from different devices, including, for example, PCs, connected TVs, and mobile devices. Cloud-gaming-as-a-platform has seen little commercial success as of the time of this report. For example, Google launched Stadia in 2019 but shut the service down in January 2023.[170] Forbes described Google Stadia as "one of the biggest failures in gaming industry history."[171] Prior to Google Stadia, OnLive, another attempt to commercialize cloud-gaming-as-a-platform also failed.[172]

116. Cloud-gaming-as-a-complement involves providing specialized cloud-streaming technology to players who wish to stream a subset of games they have purchased elsewhere (*e.g.*, NVIDIA's GeForce Now). This model is often referred to as the Bring Your Own Game model. For example, with NVIDIA's GeForce Now, players can connect their accounts on Steam, the Epic Games Store, Ubisoft Connect, EA Play, and GOG with GeForce Now to access select

170 https://www.forbes.com/sites/paultassi/2023/01/11/heres-google-stadias-exact-date-and-time-of-death/?sh=3a676fe22b1c.

171 https://www.forbes.com/sites/paultassi/2023/01/11/heres-google-stadias-exact-date-and-time-of-death/?sh=3a676fe22b1c.

172 https://arstechnica.com/gaming/2015/04/onlive-shuts-down-streaming-games-service-sells-patents-to-sony-embargoed-7pm-eastern/.

compatible games already purchased on those distribution platforms.[173] As such, GeForce Now does not sell games. The benefit to players is that GeForce Now provides an enhanced gameplay experience, typically reserved for high-end gaming PCs, across many devices, including laptops, old PCs, and mobile devices.

F. Monetization of digitally distributed PC games

117. Besides its impact on distribution activities, digital distribution has also facilitated new ways to monetize games or components of games. Historically, the most common revenue model for PC games was "buy-to-play." Buy-to-play is the process where a player pays a one-time, upfront fee to own the rights to play the game and its content for an unlimited term. More recently, companies have sought to generate revenues through other models, including the "free-to-play" model, and the sale of DLC and microtransactions. Digital distribution has facilitated these novel monetization models through the decoupling of games from physical media such as CD-ROMs and by requiring that video games and their players are always connected to the internet, allowing publishers to track and modify their products after they have been installed by players.

118. The "free-to-play" or "freemium" model gives players access to a portion (either content or functionality) of the game for no cost with the option to purchase additional, premium content or functionality through in-game purchases. For example, players might be able to access certain game modes, such as a game's single player campaign free of charge but would need to pay to access any other game modes (*e.g.*, multiplayer functionality). This strategy is often used to reach players who otherwise wouldn't be willing or able to purchase the game. [redacted]

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173 https://www.nvidia.com/cs-cz/geforce-now/games/.

[redacted]."[174] Free-to-play games must attract a disproportionately large player base to generate revenues because only a small portion of players spend money on premium content.[175] There are many successful free-to-play PC games, including *Fortnite*, *League of Legends*, and *Apex Legends*. *Fortnite* made over $9 billion in revenues in 2018 and 2019 across all devices/platforms.[176] Free-to-play games like *Fortnite* typically generate most of their revenues through in-game purchases of DLC and microtransactions.

119. DLC is additional (downloadable) content, sometimes referred to as "in-game content," that players can purchase within a game. DLC is often combined with other monetization models such as buy-to-play, free-to-play, and in-game currency. Historically, this content included expansion packs, new levels, new characters, and new maps. Today, many developers/publishers offer additional content that players can purchase to give them an advantage in the game or for simple aesthetic reasons. In games with their own platforms such as *Roblox*, *Fortnite* and *Minecraft*, players can also sell creations as in-game content. These purchases are often referred to as microtransactions or in-app purchases and are facilitated with in-game currency systems.

120. In-game currency can generally be purchased with real currency or generated through gameplay. Players use in-game currency to purchase things like skins, consumables, and loot boxes, among other content. Skins are changes in appearance to a player's video game avatar. Consumables are items that are typically limited to a single use and give the player an advantage

174 VALVE_ANT_1221398, at slide 18.

175 Rietveld, Joost and Joe N. Ploog. "On top of the game? The double-edged sword of incorporating social features into freemium products." *Strategic Management Journal* 43, no. 6 (2022): 1182–1207.

176 https://www.ign.com/articles/fortnite-made-9-billion-in-two-years-while-epic-games-store-has-yet-to-turn-a-profit.

during gameplay. Loot boxes are mystery boxes containing goods such as new characters, equipment, and skins. Loot boxes are popular among players because of the possibility that they might contain rare items.

121. Many PC games also offer DLC and other perks through a "season pass." Though not always requiring a purchase, season passes are typically viewed as another form of video game monetization that is separate from the purchase or download of the base game. Under some season passes, players will make a one-time purchase for a bundle of DLC at a reduced price. For example, *The Witcher 3: Wild Hunt* Expansion Pass gives players access to both the *Hearts of Stone* and *Blood and Wine* expansion packs at a lower price than when purchased individually.[177] Other season passes are more like a subscription model in that players purchase the pass to receive access to additional content for as long as the pass is active (*e.g.*, one year). Once the "season" has ended, the player's pass expires, and the player would need to purchase a new pass for the next season to continue receiving additional DLC and perks.

IX. STEAM DISTRIBUTION PLATFORM

122. Valve was founded in 1996 as a video game developer. In the late 1990's and early 2000's, Valve released several popular games including *Half-Life*, *Team Fortress Classic*, and *Counter-Strike*, some of which featured online multiplayer capabilities.[178] In the late 1990's and early 2000's, Valve hosted online play for Valve games on the World Opponent Network ("WON"), which the company acquired in 2001.[179] Before introducing Steam, Valve published its games

177 https://www.gog.com/en/game/the_witcher_3_wild_hunt_expansion_pass; https://www.gog.com/game/the_witcher_3_wild_hunt_hearts_of_stone; https://www.gog.com/game/witcher_3_wild_hunt_the_blood_and_wine_pack.

178 https://www.valvesoftware.com/en/about; https://www.gamesradar.com/history-of-valve/.

179 https://www.pcgamer.com/a-brief-history-of-online-gaming-on-the-pc/.

through a company called Sierra On-Line, and like most developers at the time, distributed its games physically, via CD-ROM disc.[180]

123. Valve launched Steam in 2003. In its earliest days, Steam functioned primarily as a maintenance platform for distributing Valve game updates and "patches,"[181] which are software revisions designed to fix, improve, or modify a video game. Since compatibility issues can arise when players with different game versions attempt to play each other online, Steam helped facilitate online play by providing Valve customers a central hub for keeping games up to date.[182]

124. Steam's rise as a distribution platform began in 2004, with Valve's release of its hit game *Half-Life 2*.[183] Valve offered digital copies of *Half-Life 2* for sale through the Steam platform and, as a stated antipiracy measure, required that all purchasers of *Half-Life 2* (including purchasers of physical copies of *Half-Life 2*) install Steam in order to authenticate and play the game.[184] At the time, this requirement was unpopular with players, particularly given Steam's early technical problems.[185] However, despite the initial unpopularity of Steam, *Half-Life 2* was a major critical and commercial success, selling 6.5 million copies between 2004 and 2008.[186]

125. Valve also migrated its online multiplayer hosting from WON to the Steam platform in 2004. That year, Valve shut down WON, thereby forcing players of popular online multiplayer Valve games like *Counter-Strike*, *Day of Defeat*, and *Team Fortress Classic* to download Steam

[180] See, for example, https://valvearchive.com/web_archive/sierra.com/info/press/0056.html.

[181] https://www.gamesradar.com/history-of-valve/.

[182] https://www.gamesradar.com/history-of-valve/.

[183] https://www.pcgamer.com/steam-versions/.

[184] https://kotaku.com/steam-is-10-today-remember-when-it-sucked-1297594444; http://news.bbc.co.uk/2/hi/technology/4019095.stm.

[185] https://www.gamesradar.com/history-of-valve/.

[186] https://www.shacknews.com/article/56193/valve-reveals-lifetime-retail-sales.

to retain multiplayer functionality.[187] Valve's pairing of *Half-Life 2* and other Valve games with Steam imbued the platform with a significant user base.

126. In 2005, Valve capitalized on this user base by, for the first time, offering third-party games for sale through Steam.[188] According to the testimony of Valve's Chief Operating Officer, Scott Lynch, in the early days of Valve, [redacted].[190] This coincided with the 2011 launch of EA's Origin (now the EA app) digital PC game distribution platform. According to the testimony of Valve's COO, Scott Lynch, [redacted]."[191] In addition to generating revenue for Valve, the sale of third-party games through Steam also allowed Valve to diversify and expand Steam's game catalog, thereby increasing the attractiveness of the platform to consumers and turning Steam into a digital distribution platform.

127. Steam was among the first digital distributors of PC games, and the shift from the physical distribution of PC games to digital distribution was in large part facilitated by Steam along with the proliferation of high-speed internet. Since opening Steam to third-party games in 2005, Valve has continuously expanded Steam's catalog of third-party games. Between 2007 and 2008, Valve added several new features to the Steam platform, including consumer-facing features such as search functionality, filters for Top Sellers and New Releases, and the ability to save game progress

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187 https://www.gamespot.com/articles/valve-to-shut-down-won-servers/1100-6102754/.
188 https://store.steampowered.com/sale/steam20#SaleSection_74421.
189 30(b)(6) Deposition of Scott Lynch, October 13, 2023, p. 100.
190 30(b)(6) Deposition of Scott Lynch, October 13, 2023, pp. 100-105.
191 30(b)(6) Deposition of Scott Lynch, October 13, 2023, p. 103.

to the Steam cloud,[192] along with developer-facing features such as the Steamworks development kit.[193] Such features served to increase Steam's "stickiness" among both consumers and developers. Steam's new functional features, extensive catalog, and convenient delivery method helped Steam compete against brick-and-mortar distributors on the consumer side of the market, while on the developer/publisher side, the low marginal cost of publishing digital games and the growing user base made selling games on Steam easier and more attractive than selling games through brick-and-mortar channels.

128. Valve began offering Steam Keys to retailers as another means of acquiring and retaining users on the Steam platform. According to the testimony of Valve employee Kristian Miller, Valve initially developed Steam Keys to enter the brick-and-mortar environment.[194] However, Steam Keys provided Valve a means of offering Steam-enabled games through other non-Steam channels as well, such as online PC retailers (*e.g.*, Humble Bundle and Green Man Gaming) and developer/publisher websites. Since games sold via Steam Key require Steam to play, the sale of games via Steam Key through non-Steam channels had the effect of drawing consumers to the Steam platform or further locking existing players into the Steam platform. Valve enabled publishers to distribute Steam-enabled games through non-Steam channels by both offering Steam Keys to publishers free of charge, and by waiving Valve's commission on the sale of games via Steam Keys.[195]

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[192] https://www.pcgamer.com/steam-versions/; https://www.gamedeveloper.com/game-platforms/valve-announces-steam-cloud-game-saving-feature.

[193] https://www.gamesindustry.biz/valve-announces-steamworks-development-tools.

[194] Deposition of Kristian Miller, October 3, 2023, pp. 57-59.

[195] For example, a developer-facing Steam promotional brochure from 2011 noted that "There's no charge for ... activation of [Steam] copies at retail or from third-party digital distributors." The brochure further stated, "Keep all of your users together no matter where or how they get your game. Steamworks has a host of features and services that support your retail product and any digital copies, wherever they are sold. It's free.

129. In 2010, Valve introduced the Steam Wallet.[196] With the Steam Wallet players could purchase Steam Wallet funds and use those funds to buy any item available in the Steam store including any in-game items.[197] In 2012, Steam introduced the Steam Community Market, which allowed players to buy and sell in-game items with other players for Steam Wallet funds.[198] Both the Steam Wallet and Steam Community Market served to further tie players to the Steam platform. Also in 2012, Steam introduced a feature called "Steam Greenlight," which was designed to facilitate the publishing of games on Steam by independent developers,[199] while simultaneously preventing low quality games from flooding the platform.[200] For a $100 fee, developers could create a Greenlight "pitch" page for their game, which could include content like game footage, screenshots, or links to game demos. Steam customers would then vote on whether the developer's game should be made available for sale on the Steam platform. Once "greenlit" by Valve and the Steam community, a developer's game could then be sold through the Steam platform.

130. Steam's Greenlight feature lowered barriers for smaller developers to distribute games through Steam, leading to a large increase in the number of games available on the platform. Following the introduction of Greenlight, the number of new games offered through Steam grew from 446 in 2012 to 6,203 in 2017.[201] Steam eventually shut down the Steam Greenlight feature in 2017, replacing it with Steam Direct (Steam's current system for submitting games to the

There is no per-copy activation charge or bandwidth fee. Ship your game at retail and online. With Steamworks, you decide where and how it will be sold." https://web.archive.org/web/20110717011637/http://www.steampowered.com/steamworks/SteamworksBrochure2011.pdf pp. 1, 5; See also 30(b)(6) Deposition of Scott Lynch, October 13, 2023, Exhibit 148, p. 10.

196 https://store.steampowered.com/oldnews/4406.

197 https://store.steampowered.com/oldnews/4406.

198 https://store.steampowered.com/oldnews/9594.

199 https://www.gamedeveloper.com/business/steam-greenlight-vs-steam-direct-what-indies-need-to-know.

200 https://www.theguardian.com/technology/2017/feb/13/valve-kills-steam-greenlight-heres-why-it-matters.

201 Data compiled from *SteamSpy.com*.

platform). However, Valve touted the success of the Greenlight program in a 2017 blog post announcing its closing:

> Nearly 10 Million players have participated in voting in Steam Greenlight, but over 63 million gamers have played a game that came to Steam via Greenlight. These players have logged a combined 3.5 Billion hours of game time in Greenlight titles. Some of those titles, like The Forest, 7 Days to Die, and Stardew Valley, are in the list of top 100 selling games ever released on Steam.[202]

131. Steam claims that Steam Direct "is designed to provide a streamlined, transparent, and affordable route for new game developers…"[203] With Steam Direct, Valve has essentially removed the greenlighting process by now allowing any developer to simply pay a fee and complete the required paperwork to launch a game on Steam. The introduction of Steam Direct has thus further lowered entry barriers for publishers. As would be expected, the number of new games available on Steam continued to increase dramatically following the introduction of Steam Direct in 2017. One developer described her concerns with Steam Direct at the time of its launch as follows:[204]

> Now with Steam Direct, all you need to do is basically pay a fee and boom, you're in. **The issue with that is that essentially Steam is turning into the PC version of Google Play Store.** That is very concerning to me as a developer and a consumer because now there's going to be even more more [sic] games on the platform. That doesn't seem like a bad thing, right? Well, it is, because Steam was already starting to get difficult to find games that were actually worth playing -- **40% of the games on Steam were released in 2016.** With Steam Direct that process of finding new games that pique your interest has become even more difficult, and as a developer, you now have to compete with a bunch of not so great games potentially taking up front page space that your game should have had. (Emphasis in original)

132. In 2018, Valve announced the introduction of a new, tiered revenue sharing structure,

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202 https://steamcommunity.com/games/593110/announcements/detail/1265922321514182595?snr=2_groupannouncements_detail_.

203 https://partner.steamgames.com/steamdirect.

204 https://www.gamedeveloper.com/business/steam-greenlight-vs-steam-direct-what-indies-need-to-know.

which remains in effect today. As Valve stated in its press release announcing the change:

> Starting from October 1, 2018 … when a game makes over $10 million on Steam, the revenue share for that application will adjust to 75%/25% on earnings beyond $10M. At $50 million, the revenue share will adjust to 80%/20% on earnings beyond $50M.[205]

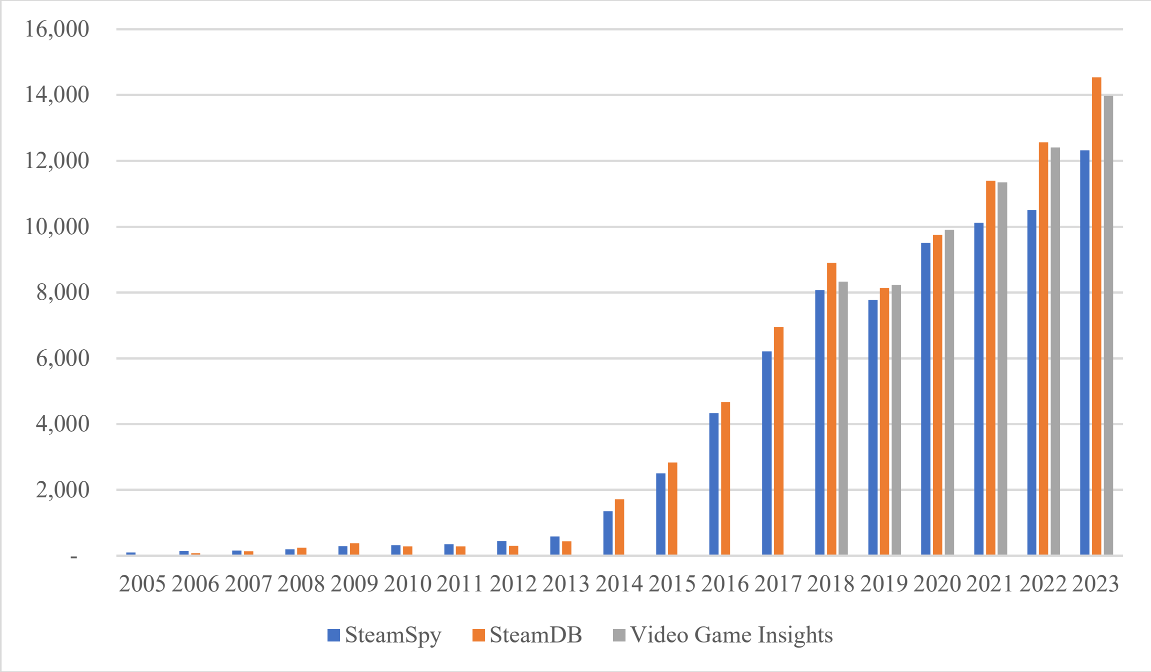
133. In practice, most developers would not benefit from the change. [redacted].[206]

134. Steam has experienced rapid and sustained growth since Valve began distributing third-party PC games through the platform in 2005. For example, Figure 4 illustrates the trend of new games introduced on Steam in each year from 2005 through 2023.

[205] https://steamcommunity.com/groups/steamworks/announcements/detail/1697191267930157838.

[206] 30(b)(6) Deposition of Scott Lynch, October 13, 2023, Exhibit 154.

Figure 4. Estimated Annual New Games Released on Steam from Various Sources[207]

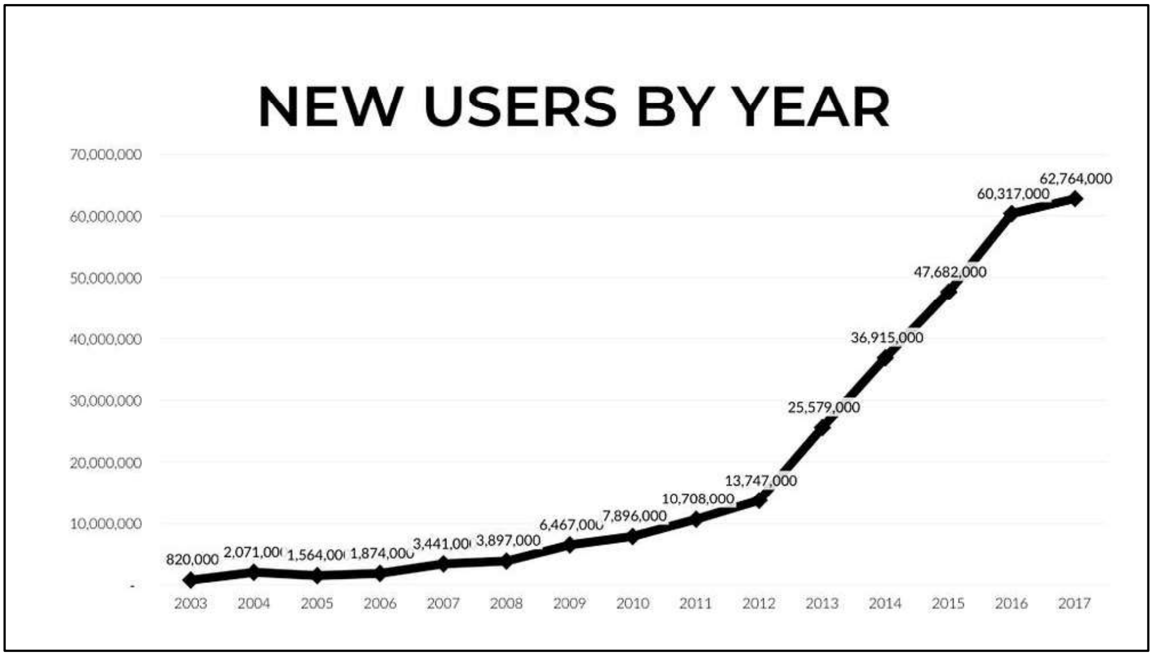


135. As shown in the figure above, which relies on three different sources, the number of games on Steam has increased significantly over the last decade. According to Steam Spy (the most understated of the three sources), from 2014 through 2023 at least 72,000 new games were introduced to the Steam platform, with more than half of those games being introduced since 2020. The number of new players on Steam has also increased significantly. Figure 5 shows a chart from Steam Spy founder Sergiy Galyonkin's 2018 blog post titled "Steam in 2017," which tracks the number of new players on Steam from 2003 through 2017.[208]

207 Data compiled from *SteamSpy.com*; https://steamdb.info/stats/releases/ (accessed on January 5, 2024); and https://vginsights.com/steam-market-data (accessed on January 5, 2024).

208 https://galyonk.in/steam-in-2017-129c0e6be260.

Figure 5. Increase in New Players on Steam



136. Similarly, and as a further sign of Steam's stickiness, the number of concurrent players signed into Steam has increased significantly. According to Valve, Steam crossed the threshold of 30,000,000 concurrent players for the first time in October 2022, just one and a half years after it reached 20,000,000 concurrent players for the first time.[209] As the number of games and players increased on the Steam platform, Valve's revenues from sales of third-party games on Steam increased as well. Figure 6 shows gross revenues Valve generated from (1) sales of third-party games on Steam and (2) sales of third-party games on Steam plus sales of Valve games from 2005 through 2021.

[209] https://store.steampowered.com/news/group/4145017/view/3677786186779762807.

[redacted]

138. According to Valve, the [redacted]

210 30(b)(6) Deposition of Scott Lynch, October 13, 2023, Exhibit 152.

[redacted][213]

X. THE EXTENT OF MULTIHOMING IN THE VIDEO GAME INDUSTRY

139. Multihoming in the context of video games refers to (1) the choice of players to use more than one device type to play video games and (2) the choice of video game developers/publishers to distribute their games for more than one device type. Multihoming may also occur within the context of a particular segment of the video game industry. That is, multihoming in the context of the current PC video game segment refers to (1) the choice of PC game players to use more than one digital distribution platform and (2) the choice of PC game developers/publishers to distribute their games through more than one digital distribution platform.

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[211] Valve's Response to Plaintiffs' September 13, 2023 "data letter," October 6, 2023, p. 7.

[212] Valve's Response to Plaintiffs' September 13, 2023 "data letter," October 6, 2023, pp. 7-8.

[213] Class Certification Report of Steven Schwartz, Ph.D., February 8, 2024, §5.2.2.

A. Player multihoming across device types

140. As discussed above, it is generally understood that PCs, consoles, and mobile devices have distinct characteristics that offer distinct gaming experiences and attract distinct customers or distinct types of gameplays. Thus, given the complementary nature of gaming device types, it is common for portions of the overall game player population to multi-home across two, or three, gaming device types to satisfy their demand for distinct gaming experiences. A 2023 survey conducted by Newzoo indicated that players who spend relatively more time playing video games tend to multi-home across different device types; with PC and/or console game players who played on all three device types in the past six months spending an average of 11.13 hours per week playing video games, compared to just 4.18 hours per week for players who only played on one device type.[214] According to a 2023 global Newzoo survey, 52% of worldwide video game players use a single type of device to play games, 33% use two types of devices, and 15% use all three types of devices.[215]

141. The data summarized in Tables 2 and 3 reflect player multihoming across video game device types. Table 2 addresses multihoming of video game players in the United States in 2022, whereas Table 3 addresses multihoming of video game players worldwide in 2023.[216]

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214 "PC & Console Gaming Report 2023," Newzoo, March 2023, p. 45. PC and/or console game players who played on two device types in the past six months spent an average of 8.18 hours per week playing video games.

215 "How consumers engage with video games today," Newzoo, June 2023, p. 13.

216 Acquiring data on player multi-homing behaviors requires surveying consumers. Thus, the data underlying Tables 2 and 3 are self-reported and based on limited but representative samples of consumers.

Table 2. Devices Used by U.S. Video Game Players (2022)[217]

	% of U.S. Players	% of U.S. PC Players[218]
Play on PC	43%	
Play on PC only	8%	19%
Also play on console	23%	53%
Also play on mobile	32%	74%
Also play on console and mobile	20%	47%
	% of U.S. Players	**% of U.S. Console Players**
Play on console	52%	
Play on console only	13%	25%
Also play on PC	23%	44%
Also play on mobile	36%	69%
Also play on PC and mobile	20%	38%
	% of U.S. Players	**% of U.S. Mobile Players**
Play on mobile	70%	
Play on mobile only	22%	31%
Also play on PC	32%	46%
Also play on console	36%	51%
Also play on PC and console	20%	29%

217 "Essential Facts About the Computer and Video Game Industry," Entertainment Software Association, 2022, p. 9. The percentages of consumers that only play on a single device type were calculated as follows: (1) total percentage on a single device type – (2) multihoming percentage with a second device type – (3) multihoming percentage with a third device type + (4) multihoming percentage across all three device types. For example, for PC, the calculation would be as follows: [43% - 23% - 32% + 20% = 8%].

218 The percentages shown in the right column were calculated by dividing the percentages in the left column by the total percentage of players using the relevant device type. For example, the percentage of U.S. PC players on PC only was calculated as follows: [8% ÷ 43% = 19%].

Table 3. Devices Used by Worldwide Video Game Players (2023)[219]

	% of WW Players	% of WW PC Players[220]
Play on PC	43%	
Play on PC only	8%	19%
Also play on console	19%	44%
Also play on mobile	31%	72%
Also play on console and mobile	15%	35%
	% of WW Players	**% of WW Console Players**
Play on console	41%	
Play on console only	9%	22%
Also play on PC	19%	46%
Also play on mobile	28%	68%
Also play on PC and mobile	15%	37%
	% of WW Players	**% of WW Mobile Players**
Play on mobile	79%	
Play on mobile only	35%	44%
Also play on PC	31%	39%
Also play on console	28%	35%
Also play on PC and console	15%	19%

142. The data summarized in Tables 2 and 3 provide various insights to the topic of players multihoming across video game device types. First, player multihoming across device types is prevalent in the video game industry (at least 51% of total U.S. players multi-homed across device

219 "How consumers engage with video games today," Newzoo, June 2023, p. 13.

220 The percentages shown in the right column were calculated by dividing the percentages in the left column by the total percentage of players using the relevant device type. For example, the percentage of U.S. PC players on PC only was calculated as follows: [8% ÷ 43% = 19%].

types in 2022,[221] and 48% of total worldwide players multi-homed across device types in 2023).[222] This is expected given, and consistent with, the distinctions among the three video game device types discussed above. For example, factors such as a player's technological sophistication, differences in gameplay environments, a player's desire for multiple gameplay experiences, and expected duration of gameplay sessions, among others, may influence a player's multi-homing behaviors.

143. A second insight from the data summarized in the tables above is that PC and console players multi-home more than mobile players (81% of PC players multi-home, 75-78% of console players multi-home, and 56-69% of mobile players multi-home).[223] This is also expected given, and consistent with, the distinctions among the three video game device types and their respective players discussed above (with PC players, on average, being more heavy users than mobile players and, to lesser extent, console players). Moreover, PC and/or console players are likely to also own a mobile device because it provides functionalities beyond gaming, whereas mobile players are less likely to also own a console or PC dedicated to gaming.

144. The data summarized in the tables above indicate that significantly more video game players use mobile devices than consoles or PCs (70-79% of total players use mobile devices, 41-

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221 [100% – 8% play on PC only – 13% play on console only – 22% play on mobile only – 6% not captured in the data = 51% of U.S. players multi-homed across devices]. With the worldwide data provided by Newzoo, one can capture all players in the market (100%) by, for example, adding all players on mobile (79%), console only players (9%), PC only players (8%), and console and PC multi-home players that do not also multi-home on mobile (4%). However, the same cannot be done with the U.S. data provided by the ESA. Instead, a small percentage (6%) of players do not appear to fall into any of the single device or multihoming data points provided for consoles, PCs, and mobile. The ESA does not explain this discrepancy but it is possible that these players consist of those who play on tablets or virtual reality devices only.

222 [100% – 8% play on PC only – 9% play on console only – 35% play on mobile only = 48% of worldwide players multi-homed across devices].

223 [100% - 19% of U.S. and worldwide PC players only on PC = 81%; 100% - 25% of U.S. console players only on console = 75% and 100% - 22% of worldwide console players only on console = 78%; 100% - 31% of U.S. mobile players only on mobile = 69% and 100% - 44% of worldwide mobile players only on mobile = 56%].

52% of total players use consoles, and 43% of total players use PCs). While 22-35% of total video game players are mobile players that do not multi-home, and are likely casual players that did not acquire their mobile devices for the sole purpose of playing mobile games, a relatively large portion of PC and console players multi-home to mobile devices (72-74% of PC players multi-home to mobile devices, and 68-69% of console players multi-home to mobile devices), likely for more casual gameplay scenarios or playing video games when they are away from their homes.

145. A third insight regarding player multi-homing across device types is that multihoming among PC and console players across these device types is roughly equivalent. Whereas roughly half of PC players multi-home to consoles (53% of U.S. PC players multi-homed to consoles in 2022, and 44% of worldwide PC players multi-homed to consoles in 2023), slightly less than half of console players multi-home to PCs (44% of U.S. console players multi-homed to PCs in 2022, and 46% of worldwide console players multi-homed to PCs in 2023). Factors driving multi-homing across PCs and consoles, as discussed above, likely include: certain games or game mods may be available for PCs that are not for consoles, players may prefer to use a mouse and keyboard for some games and a console controller for others, and players may prefer to have more intense competitive gaming sessions using a PC and more relaxed gaming sessions using a console, among other reasons. PC game players might also multi-home to consoles if they wish to play desirable exclusive titles that are not released on PC, such as those published by the console manufacturers.

B. Developer/publisher multihoming across device types

146. As noted above, there are also meaningful distinctions in game production for PC, console, and mobile devices, and developer/publishers cannot release a single version of a game that is compatible with all three device types. Thus, developers/publishers must create different versions

of a game for each device type, increasing the cost of multihoming. It is for this reason that many smaller studios tend to specialize in offering games for one type of device, while larger publishers tend to be active across multiple device types but may do so by having multiple game studios working on the same game for different device types.

147. A casual review reveals that many of the top selling games are available on both PC and at least one console device. For example, eight of the ten best-selling video games released in 2023 by revenue, as identified in a November 2023 Newzoo article, are available for both PC and at least one console device.[224] Thus, as is generally observed in the industry, it is prevalent that games available for consoles are multi-homed to PCs, which is indicative of distinct player audiences across device types. However, given the large disparity in the volume of games available for PCs, a much smaller portion of games available for PCs are multi-homed to console devices.

148. Considering only the PC games distributed through Steam, Figure 3 in Section VII.D above compares the number of new games released on PCs to estimates of new games released on the major consoles (*i.e.*, Xbox, PlayStation, and Nintendo Switch) each year from 2018 through 2021. Based on the data underlying the charts in Figure 3 and conservatively assuming that (1) all games available on consoles are also available on PCs, and (2) no console title multihoming across digital and physical media, approximately 24%, at most, of new games released on Steam (in 2021) could have multi-homed to a console device. However, not all games available on consoles are available on PCs and there is a significant amount of console title multihoming across digital and physical media. Thus, the portion of games available on PCs that are multi-homed to consoles is likely less

224 https://newzoo.com/resources/blog/top-10-video-game-releases-of-2023-so-far-through-october. *The Legend of Zelda: Tears of the Kingdom* is only available on Nintendo Switch and *Marvel's Spider-Man 2* is only available on Sony PlayStation 5.

than 24%. Table 4 presents the new game release data and percentages derived therefrom.

Table 4. New Game Releases[225]

Year	Steam	PlayStation	Xbox	Switch	Total Console	Total Console % of Steam
2018	8,068	1,168	764	1,096	1,683	20.8%
2019	7,772	1,108	728	1,317	1,787	23.0%
2020	9,503	928	638	1,188	1,557	16.4%
2021	10,121	1,145	849	1,844	2,408	23.8%

149. Survey data reported by the GDC supports the conclusion that a large portion of PC developers do not multi-home to console devices. For at least the past four years, in GDC's State of the Game Industry survey, PC has ranked as the top device type that video game developers are (1) most interested in, (2) currently developing a game for, and (3) planning to develop their next game for.[226] GDC explained that PC, iOS, and Android "typically lead in these surveys for a clear reason: they're the most accessible platforms to develop for. They're ubiquitous, don't require a dev kit like a console, don't require strict certification, and publishing and distributing games is much easier than 'walled garden' console ecosystems."[227]

150. As discussed above, game development for mobile devices can be significantly different from both PC and console game development because of the differences in device hardware, target audience, and gameplay scenarios. In fact, it is not uncommon for major publishers to partner with developers who specialize in mobile game development when launching a mobile version of an

225 Data compiled from *SteamSpy.com*; https://arstechnica.com/gaming/2022/02/fewer-and-fewer-console-games-are-seeing-a-physical-release/.

226 "State of the Game Industry 2024," Game Developers Conference; "State of the Game Industry 2023," Game Developers Conference; "State of the Game Industry 2022," Game Developers Conference; "State of the Game Industry 2021," Game Developers Conference.

227 "State of the Game Industry 2021," Game Developers Conference, p. 5.

existing title.[228] Mobile games are typically designed for smaller screens and shorter gameplay sessions. For this reason, many mobile game developers create games that are generally considered to be easier and cheaper to develop than PC or console video games. Moreover, many mobile games are monetized through advertisements, which aren't permitted as a means of monetization on consoles or Steam. Thus, while developers/publishers may distribute mobile versions of a game that is available on PCs and/or consoles, these mobile versions are generally "lite" versions that are relatively less sophisticated than the PC and/or console versions to accommodate the technological limitations of mobile devices compared to PCs and/or consoles.

151. As the U.S. District Court for the Northern District of California noted, "games played on mobile have lower graphics and are less sophisticated than games played on console or gaming PCs."[229] For example, Activision Blizzard distributes *Call of Duty: Modern Warfare III* for PC (through Steam and Battle.net), and consoles (through Xbox, and PlayStation), but not mobile platforms.[230] Instead, Activision Blizzard released *Call of Duty: Mobile* for iOS and Android devices.[231] Thus, where developers/publishers distribute mobile versions of titles also available on PC and/or console devices, the mobile versions are generally significantly different from the PC and/or console versions of the game and generally should not be considered instances of multi-homing a game to mobile devices.

C. Player multihoming across digital PC game distribution platforms

152. Multihoming costs for players across digital PC game distribution platforms are low. It

228 For example, Activision partnered with TiMi Studios, a subsidiary of Tencent, to develop "Call of Duty: Mobile." See, https://www.timistudios.com/.

229 *FTC v. Microsoft Corp.*, Case No. 23-cv-02880-JSC, Document 305, p. 3.

230 https://www.callofduty.com/playnow/modernwarfare3.

231 https://www.callofduty.com/mobile.

costs players little, or nothing, to create accounts on Steam, the Epic Games Store, Battle.net, or Ubisoft Connect, for example. All else remaining equal, players prefer, where possible, to consolidate their library of games to one, or just a few, digital distribution platforms to facilitate convenience. Thus, players will generally choose to home on a platform that offers a large selection of games and switch platforms only in instances where (1) a desired game is not available on the platform, (2) materially differentiated game content is available on a different digital distribution platform, (3) the same content is available on a different digital distribution platform at a materially lower price; and/or (4) a larger or differentiated network of players for a desired game is available on a different platform that will enable a materially different social or gameplay experience.

153. Steam offers the largest selection of games and user base of all digital distribution platforms, by far. Self-distribution PC game platforms only offer the platform owner's (*i.e.*, publisher's) catalog of games, and Ubisoft, EA, and Activision Blizzard (major publishers with self-distribution platforms) all currently release games on Steam. Thus, for PC game players on Steam, there is currently little apparent incentive to multi-home to major self-distribution PC game platforms when purchasing new PC games.[232]

154. PC game players on Steam theoretically could also multi-home to one of the other third-party digital PC game distribution platforms. As discussed below in Section XII.D, however, Valve's parity requirements preclude the ability of rival distribution platforms to differentiate themselves and thereby undermine players' incentives to multi-home away from Steam.

155. Also, as discussed above, GOG focuses on offering players access to old, iconic games.[233]

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232 Players that home on Steam may multi-home to self-distribution PC game platforms if they acquired a title from such platforms before the owners of those platforms returned their game libraries to Steam.

233 https://www.gog.com/en/good-old-games.

Thus, unless a player desires to play an older game that is not available on Steam, all else remaining equal, there is little apparent incentive to multi-home from Steam to GOG. In fact, of the top 90 most played games on Steam in 2023, only eight (8.9%) are also available on GOG,[234] suggesting that players focused on playing the latest and most popular games would have little incentive to multi-home to GOG from Steam.

156. PC game players on Steam could also theoretically multi-home to the Epic Games Store. However, the volume of games offered on Steam is substantially larger than the volume of games offered on the Epic Games Store. While Steam offered more than 63,000 total games by the end of 2022, the Epic Games Store offered just 1,548 games (2.5% of the game volume on Steam) at the end of 2022.[235] Thus, given the significantly larger volume of games available on Steam, all else remaining equal, there is less apparent incentive for players that home on Steam to multi-home to the Epic Games Store, unless the player desires to play a game within the Epic Games Store's smaller offering that is not also available on Steam. In light of this, Epic Games attempted to incentivize players to multi-home by offering timed exclusives and popular games for free on the Epic Games Store. For example, in 2022, Epic Games offered 99 free games collectively worth $2,240.[236] To the extent that multihoming from Steam to the Epic Games Store occurs, it seems likely that this is largely driven by players claiming these free game offerings. In 2022 alone, nearly 700 million free games were claimed by players on the Epic Games Store.[237]

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234 Appendix C. Steam only lists the top 90 games in its "Best of 2023" most played games list. See, https://store.steampowered.com/sale/BestOf2023?tab=3. Thus, to be consistent, when reviewing the most played or top selling games on competing distribution platforms, I only reviewed the top 90 games.

235 Data compiled from *SteamSpy.com* and https://store.epicgames.com/en-US/news/epic-games-store-2022-year-in-review.

236 https://store.epicgames.com/en-US/news/epic-games-store-2022-year-in-review.

237 https://store.epicgames.com/en-US/news/epic-games-store-2022-year-in-review.

D. Developer/publisher multihoming across digital PC game distribution platforms

157. Multihoming costs for developers/publishers across digital PC game distribution platforms are relatively low compared to the costs of multihoming across device types. Unlike game development across device types, which requires different capabilities to produce different versions of a game, the same version of a PC game can be distributed through different digital platforms, requiring only platform-specific "wrappers" that overlay the game. As GOG notes in its developer documentation: "If you already have a Steam version of your product, you can get it up and running on our platform within minutes, not hours."[238] However, opportunities for developers/publishers to multi-home across digital PC game distribution platforms are limited.

158. Given that self-distribution PC game platforms only offer game catalogs of the publishers that own the platforms, multi-homing across digital PC game distribution platforms for developers/publishers that do not have their own distribution platforms must occur to a third-party PC game distribution platform (*e.g.*, Steam, the Epic Games Store, and GOG). Simple comparison of the number of games offered on each third-party distribution platform illuminates the maximum amount of multihoming of games that could be occurring across these platforms. Steam offered more than approximately 63,000 games as of the end of 2022, whereas the Epic Games Store offered just 1,548 games at the time.[239] At the end of 2022, GOG offered 7,391 games on its platform.[240] Based on these numbers, and conservatively assuming that (1) all games on the Epic Games Store and GOG multi-home to Steam, and (2) none of the games on the Epic Games Store are multi-homed to GOG, at most, approximately 14.2% of PC games on Steam are multi-homed

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238 https://docs.gog.com/steam-sdk-wrapper/.

239 Data compiled from *SteamSpy.com*; and https://store.epicgames.com/en-US/news/epic-games-store-2022-year-in-review.

240 https://web.archive.org/web/20221231102907/https://www.gog.com/en/games.

to these two rival third-party PC game distribution platforms.

159. It is also worth noting that, of the top 90 most played games on Steam in 2023, only 33 (36.7%) of those games were available on the Epic Games Store.[241] However, of the top 90 most played games on the Epic Games Store as of January 2024, 74 (82.2%) were available on Steam.[242] This indicates that significantly less of the top-played games on Steam are multi-homed to the Epic Games Store than vice versa.

160. Considering multi-homed games between Steam and GOG, of the top 90 most played games on Steam in 2023, only eight (8.9%) were available on GOG. However, of the top 90 bestselling games on GOG as of January 7, 2024, 52 (57.8%) were available on Steam.[243] This indicates that significantly less of the top-played games on Steam are multi-homed to GOG than vice versa.

161. The above analysis considers multihoming of developers/publishers generally across third-party PC game distribution platforms. However, it is also worth specifically considering multihoming behaviors of fully integrated PC game developers/publishers that operate their own self-distribution platforms. To this end, I examined whether each PC game Activision Blizzard, EA, and Ubisoft PC released within the past five years is currently available on Steam. As of the date of this report, twelve of twelve (100%) of recent (*i.e.*, released within the past five years)

241 Appendix C.1.

242 Appendix C.2. These games may include games that were offered for free on the Epic Games Store or paid timed exclusives, which may have influenced (1) the games in the top 90 most played games on the Epic Games Store in 2023, and (2) the games that were not available on Steam as of January 2024.

243 Appendix C.3. For several of the GOG bestselling games there was ambiguity as to whether that exact version of the game is being sold on Steam on a standalone basis. In those instances, the two offerings were closely compared, and judgement was exercised to determine if they were the same game.

Activision Blizzard PC games are available on Steam.[244] Though EA stopped selling its games through Steam around 2011, the publisher has since returned to the platform.[245] Thirty-two of thirty-three (97%) of recent EA PC games are available on Steam.[246] Ubisoft also stopped offering new titles through Steam beginning in 2019,[247] but it too returned to the platform in or around November 2022.[248] Today, eighteen of twenty-six (69%) of recent Ubisoft PC games are available through Steam. Of the eight recent Ubisoft PC games not currently available on Steam, one game has a "coming soon" page on Steam, and five others were released in the past year. These five new Ubisoft releases may yet become available on Steam, given that Ubisoft has waited, on average, more than one year before making its newly released games available through the Steam platform.[249] In addition to offering most of their games through Steam, Activision Blizzard, EA, and Ubisoft also distribute games through the Epic Games Store and GOG.[250] Thus, as of the time of this report, multihoming to Steam is prevalent among fully integrated PC game developers/publishers that operate self-distribution platforms.

E. Conclusions regarding multihoming in the video game industry

162. According to the ESA, 51% of all U.S. video game players multi-homes across devices

244 Appendix D.1.

245 https://arstechnica.com/gaming/2019/10/so-long-origin-ea-comes-back-to-steam-with-new-games/.

246 Appendix D.2.

247 https://www.gamespot.com/articles/ubisoft-explains-why-it-doesnt-release-games-on-st/1100-6469502/; https://www.nytimes.com/2019/08/27/business/steam-epic-games-store.html.

248 https://www.theverge.com/2022/11/21/23471589/ubisoft-return-steam-2022-assassins-creed-valhalla.

249 Appendix D.3.

250 https://store.epicgames.com/en-US/browse?q=electronic%20arts&sortBy=relevancy&sortDir=DESC&count=40; https://store.epicgames.com/en-US/browse?q=ubisoft&sortBy=relevancy&sortDir=DESC&count=40; https://store.epicgames.com/en-US/browse?q=activision&sortBy=relevancy&sortDir=DESC&count=40; https://www.gog.com/en/games?publishers=electronic-arts; https://www.gog.com/en/games?developers=ubisoft; https://www.gog.com/en/games?publishers=activision.

(48% of worldwide video game players according to Newzoo). This is even higher when focusing just on the subsample of PC players where nearly 81% of all U.S. and worldwide PC game players multi-homes across devices. These numbers speak to the complementarity between PC, console, and mobile devices for playing video games. PCs, for example, have larger supply rates of games, but some console video games have higher production value, especially those published by the console manufacturers which tend to be exclusive to just one device (*e.g.*, *Super Mario Wonder*). Similarly, while PC games are often designed to be enjoyed from the comfort of one's home, mobile games are made for shorter sessions, suitable for playing outside the house such as when commuting on public transportation. Both in the U.S. and in the rest of the world, PC players are least likely to single-home on one device. This is at least partly reflected by the observation that PC players tend to be heavy users with a large appetite and high willingness-to-pay for games. Mobile players, on the other hand, are mostly lighter users with a smaller appetite for games.

163. Within the subset of PC game distribution platforms, Steam has the largest selection of video games of all PC distribution platforms and similarly the largest market share. Many PC players are Steam users first and foremost. They may multi-home to the Epic Games Store or self-distribution platforms to the extent those platforms offer (timed) exclusive content or materially differentiated content, but most of the players' time and money is spent on Steam.

164. On the publisher side, many of the best-selling video games multi-home across all three device types. For example, according to Newzoo, eight of the ten best-selling video games released in 2023 by revenue are available for both PC and at least one console device. This likely extends to mobile devices, with the caveat that publishers will have to modify their games to these devices as well as to players' heterogeneous preferences across different device types. Moving further

down the sales ranks, however, things look different. Indeed, it is highly likely that multi-homing rates on the publisher side are significantly lower than on the player side. For example, based on conservative assumptions, I estimate that 24%, at most, of new games released on Steam (in 2021) could have multihomed to a console device. Entry barriers for publishers to platforms such as Steam are low and have become lower in recent years. Entry barriers for consoles are significantly higher, and mobile devices are differentiated from PCs, which has resulted in many (especially smaller) developers specializing in either mobile game development or PC game development.

165. Within the subset of PC distribution platforms, it is likely that publishers with their own distribution platforms both self-distribute their titles and distribute them through Steam. Indeed, Activision Blizzard (100%), Electronic Arts (97%) and Ubisoft (69%) have all distributed recently released titles across both their own distribution platforms and Steam. Multi-homing rates on the publisher side between Steam and GOG are likely much lower, given that GOG is largely used as a (DRM-free) platform for back-catalog games and smaller publishers.

XI. THE EXTENT TO WHICH THERE ARE VIABLE ALTERNATIVES TO STEAM FOR PC GAME DISTRIBUTION

166. A cursory review of the various PC game distribution offerings in the current PC game landscape may leave one with the impression that players and publishers have numerous options when choosing how to acquire and distribute their PC games, respectively. A closer examination of the current landscape, however, reveals that some of the offerings are not alternatives to Steam at all, and others are partial alternatives to Steam, at best.

A. Other third-party PC game distribution platforms

167. In addition to Steam, third-party PC game distribution platforms with meaningful presence

in the industry include the Epic Games Stores and GOG. While the Epic Games Store is attempting to compete head-on with Steam, as discussed above, GOG has differentiated itself by focusing on offering players access to old, iconic games that are free of digital rights management.[251] Thus, when considering whether another third-party PC game distribution platform can be a viable alternative to Steam for PC game distribution, one should focus on the Epic Games Store and the degree of success, or lack thereof, it has had in its attempt to challenge Steam as a direct competitor.

168. Steam had long been the dominant digital PC game distribution platform in December 2018 when Epic Games made it clear that it was attempting to provide an alternative to Steam for both PC game players and PC game developers/publishers upon the launch of the Epic Games Store. In its post announcing the launch, Epic Games stated the following:[252]

> The Epic Games store is now open, featuring awesome high-quality games from other developers. Our goal is to bring you great games, and to give game developers a better deal: they receive 88% of the money you spend, versus only 70% elsewhere. This helps developers succeed and make more of the games you love.

Thus, Epic Games attempted to incentivize PC game developers/publishers to distribute their games on the Epic Games Store through a more appealing revenue share than what publishers received from Steam. However, 70% of many sales is more than 88% of no sales—meaning that the more favorable revenue share publishers were offered from the Epic Games Store was meaningless unless PC game players were on the Epic Games Store platform purchasing their games.

169. Epic faced a "chicken-and-egg" problem where, even with the relatively generous revenue

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[251] https://store.epicgames.com/en-US/news/the-epic-games-store-is-now-live; https://www.gog.com/en/good-old-games.

[252] https://store.epicgames.com/en-US/news/the-epic-games-store-is-now-live.

share, PC game publishers had little incentive to distribute their games through the Epic Games Store unless and until a meaningful number of PC game players were on the platform. At the same time, PC game players had little incentive to join the Epic Games Store unless and until a meaningful number of PC game publishers distributed their games through the platform. However, even if publishers were willing to distribute their games through the Epic Games Store, Valve's parity requirements (discussed below) precluded publishers that also distribute their games on Steam from offering differentiated game content and/or lower prices on the Epic Games Store, thus limiting incentives for players to purchase PC games on the Epic Games Store rather than Steam.

170. In its attempt to solve this dilemma, Epic Games has spent massive amounts of money subsidizing both developers/publishers and players on the Epic Games Store platform. For developers/publishers, before 2023, Epic would routinely pay publishers to launch their games as timed exclusives on the Epic Games Store. For example, in 2019, Epic Games paid publisher Take Two $146 million to offer *Borderlands 3* as an Epic Games Store exclusive on PC for a timed exclusive window of six months.[253] In 2023, Epic Games introduced its Epic First Run program, where publishers get to keep 100% of the net revenues generated on the Epic Games Store for six months if they choose to make their games exclusive (*i.e.*, not release on Steam) for that time.[254] Publishers included in the program further benefit from selective promotions on the platform. Additionally, for games developed using Epic Game's Unreal Engine, revenues generated from the Epic Games Store are excluded from the calculations of the 5% royalty due for use of Unreal

253 https://www.ign.com/articles/epic-paid-146m-for-borderlands-3-pc-timed-exclusivity.

254 https://store.epicgames.com/en-US/news/introducing-the-epic-first-run-program.

Engine.[255] For players on the Epic Games Store, Epic Games has paid developers/publishers to distribute their games on the Epic Games Store at no cost to players since it launched in late 2018. For example, Epic Games revealed through its litigation with Apple that it paid $11.6 million to developers/publishers to "buyout" the rights to distribute 38 games to players on the Epic Games Store for free from December 2018 through September 2019.[256] According to an Epic Games presentation from October 2019, it acquired 18.5 million unique users on the Epic Games Store via free games, and of those, 7% made a purchase on the platform.[257]

171. As discussed above, Epic Games has attempted to attract players to the Epic Games Store by offering timed exclusives, which are games that are launched on only one third-party distribution platform for a negotiated period before the publisher makes them available on other third-party distribution platforms at a later date. Additionally, Epic Games has given away free games valued at a total of between $1,455 and $2,407 per player in each year from 2019 through 2022. In 2022 alone, players claimed nearly 700 million free games on the Epic Games Store. Table 5 summarizes the free games Epic Games has provided players on the Epic Games Store by paying the publishers of those games a flat fee (from 2019 through 2022).

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[255] https://www.unrealengine.com/en-US/faq.

[256] https://www.theverge.com/2021/5/4/22418782/epic-games-store-free-games-cost-apple-trial-arkham-subnautica-mutant-year-zero.

[257] *Epic Games, Inc. v. Apple Inc.*, Case No. 4:20-cv-05640-YGR, DX-3712.001 and .009.

Table 5. Free Games Distributed Through the Epic Games Store (2019-2022)[258]

	2019	2020	2021	2022
Free games offered	73	103	89	99
Value of free games	$1,455	$2,407	$2,120	$2,240
Free games claimed	200 million	749 million	765 million	700 million

According to information produced in Epic Games' lawsuit with Apple, Epic Games' efforts to incentivize developers/publishers and players to use the Epic Games Store resulted in a $181 million gross loss for the platform in 2019 and projected gross losses of $273 million and $139 million in 2020 and 2021, respectively.[259]

172. As noted above, Epic Games announced that players spent $820 million on its platform, including $355 million on third-party applications, in 2022.[260] Notably, this $355 million spent on third-party applications amounts to merely 43.3% of sales on the Epic Games Store. In 2021, players spent $840 million on the Epic Games Store, including approximately $300 million (35.7%) on third-party games.[261] [redacted] [redacted][262] Thus, player spending on third-party PC games on the Epic Games Store [redacted].

173. In its "Review of Performance and Strategy" from October 2019, Epic Games indicated

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258 https://www.gamegrin.com/news/epic-games-store-how-2019-compares-to-2020/; https://store.epicgames.com/en-US/news/epic-games-store-2020-year-in-review; https://www.epicgames.com/site/en-US/news/epic-games-store-2021-year-in-review; https://store.epicgames.com/en-US/news/epic-games-store-2022-year-in-review.

259 *Epic Games, Inc. v. Apple Inc.*, Case No. 4:20-cv-05640-YGR, DX-3712.017.

260 https://store.epicgames.com/en-US/news/epic-games-store-2022-year-in-review.

261 https://www.epicgames.com/site/en-US/news/epic-games-store-2021-year-in-review.

262 30(b)(6) Deposition of Scott Lynch, October 13, 2023, Exhibit 152.

that it anticipated capturing "50% of all PC revenue if Steam doesn't react," or "35% of all PC revenue if Steam does react."[263] However, the total $840 million generated on the Epic Games Store in 2021 (from sales of both third-party and Epic's proprietary games) [redacted]. Thus, at least as of the end of 2021, after three full years of operations, Epic has fallen far short of its projection that it would capture 35%-50% "of all PC revenue."

174. While Epic Games reported that the Epic Games Store was home to over 230 million players in 2022, the losses incurred from the operation suggest that this user base came at a hefty cost that was paid for from sales of Epic Games' own game catalog (*e.g.*, *Fortnite*). Thus, the Epic Games Store is only likely to be a potentially viable alternative to Steam for distribution of PC games to the extent, and for so long as, Epic Games is willing and able to continue invest heavily in incentivizing publishers to distribute their games through the Epic Games Store platform.

175. To the question of how much longer Epic Games will be willing and able to invest heavily in incentivizing developers, reports state that Steve Allison, head of the Epic Games Store, testified in November 2023 that the Epic Games Store had yet to become profitable after five years of operation.[264] In contrast, Valve [redacted].[265] Further, Epic Games announced that it would be laying off 16% of its employees in September 2023, claiming that the company has been

263 *Epic Games, Inc. v. Apple Inc.*, Case No. 4:20-cv-05640-YGR, DX-3712.016.

264 https://www.theverge.com/23945184/epic-v-google-fortnite-play-store-antitrust-trial-updates/archives/25.

265 [redacted]. 30(b)(6) Deposition of Scott Lynch, October 13, 2023, Exhibit 152; and https://www.gamesindustry.biz/valve-turns-up-the-steam.

"spending way more money than we earn."[266] Thus, despite significant expenditures and effort directed towards subsidizing PC game developers/publishers and PC game players to create a third-party PC game distribution platform that is an alternative to Steam, Epic Games has thus far failed to demonstrate that it is possible to do so in a financially viable manner.

B. Self-distribution PC game platforms

176. There are currently several significant self-distribution PC game platforms. As discussed above, these include Ubisoft Connect, EA Play, Battle.net, and some popular games that have become platforms in their own right (*i.e.*, *Fortnite*, *Roblox*, and *Minecraft*). For publishers such as Ubisoft, EA, and Activision Blizzard, distribution tends not to be the main business activity these publishers are involved in (which includes the development and publishing of games across a range of first and third-party distribution platforms).

177. From the perspective of PC game players on Steam, incentives to multi-home away from Steam to a self-distribution PC game platform would include instances where (1) a desired game is available on the self-distribution platform but not Steam, (2) the self-distribution platform offers materially differentiated game content that is not available on Steam, (3) the self-distribution platform offers the same game and content at a materially lower price than what is offered on Steam, and/or (4) the self-distribution platform offers a differentiated network of players for a desired game that provide a materially different social or gameplay experience.

178. PC game players are heterogenous with tastes and preferences likely defined by things like genres, the extent of social play, and the look and feel of video games. As such, PC game players

[266] https://www.epicgames.com/site/en-US/news/layoffs-at-epic.

generally want to sample games from multiple, or numerous, different publishers. Third-party PC game distribution platforms, such as Steam, that aggregate PC games from numerous publishers accommodate these diverse preferences of PC game players more effectively than self-distribution models. Furthermore, third-party distribution platforms offer the convenience of having all or most of a player's collection of video games in the same place. While some PC game players may currently multi-home to one of the few existing self-distribution PC game platforms, most choose to acquire their games through third-party PC game distribution platforms (*e.g.*, Steam).

179. Furthermore, building and maintaining a self-distribution platform to become fully integrated requires significant scale and financial wherewithal that most mid-sized publishers likely do not possess, and small publishers definitely do not possess. However, attempts by entities with substantial financial wherewithal have demonstrated that self-distribution is not a viable alternative to PC game distribution through Steam. Ubisoft, EA, and Activision Blizzard (owner of Battle.net), three of the largest video game companies in the world,[267] each attempted to shift away from Steam to distribute their PC games on their own distribution platforms but have all since returned and are currently multi-homing games to Steam. This return of Ubisoft, EA, and Activision Blizzard to Steam demonstrates that PC game distribution strategies that do not involve Steam are not financially viable and signaled to the numerous smaller PC game publishers, warning them that attempting self-distribution as an alternative to Steam for PC game distribution is an expensive and futile undertaking.

180. For at least the reasons discussed above, self-distribution PC game platforms are not a viable alternative to Steam for PC game distribution, from either the perspective of players or

[267] See, for example, https://newzoo.com/resources/rankings/top-25-companies-game-revenues.

publishers. Additionally, games with their own platforms (*i.e.*, *Roblox*, *Minecraft*, and *Fortnite*) also are not viable alternatives to Steam for PC game distribution. This is because the in-game content offered in these games is specific to these games; such content can only be consumed by players that have installed the base game. Furthermore, stand-alone video games cannot be distributed within these platform-games, meaning that players must go to other distribution platforms, such as Steam, to access and play any other PC games.

C. Retailers

181. As discussed above, despite the emergence of digital distribution disrupting the traditional video game value chain and drastically minimizing the role of retailers, both brick-and-mortar and online retailers are still present in the video game production value chain. However, instead of physical media, retailers of PC games are now predominately selling activation keys or game keys that enable customers to download PC games from digital distribution platforms, such as Steam. In this way, brick-and-mortar and online retailers may sell PC games (or codes to access PC games), but their customers are still downloading and accessing the games from digital PC game distribution platforms. Notably, under this model, retailers are constrained by the willingness of PC game distribution platforms, such as Steam, to issue game keys to developers/publishers.[268]

182. Given that retailers are no longer selling physical copies of PC games (with the exception of certain limited-edition releases, which also tend to include activation keys), nor are they hosting the digital versions of PC games, they are merely a channel through which their customers are

[268] See, for example, Deposition of Kassidy Gerber, October 5, 2023, pp. 16, 20, 120-128, and Exhibit 103. [redacted]

directed to digital PC game distribution platforms. Whether a player transacts directly with Steam for the purchase of a game or that player purchases a Steam Key for the same game at GameStop, the player has purchased a game that is hosted on the Steam platform. Thus, retailers are not an alternative to Steam for PC game distribution. Rather, retailers are ancillary, complementary channels through which players are directed to Steam for distribution of PC games.

D. Multigame subscription models

183. In the case of multigame subscription models, from the perspectives of both players and PC game publishers, these are merely a different way of structuring transactions between themselves and the platform. Whereas transactions between players and a PC game distribution platform are generally on a per-game basis, under subscription models, players pay a recurring fee for temporally limited access to a catalog of games on the platform. Although multigame subscription models structure transactions differently from individual game transactions, players are ultimately paying the platform for the rights to play games under both transaction models.

184. Multigame subscription models through PC game distribution platforms are also merely different transaction structures from the perspective of publishers. Under the traditional model, publishers are compensated for one-off sales of their games and in-game items, where applicable, through arrangements like Steam's 70/30 commission fee. Under multigame subscription models, while compensation structures may vary, publishers are commonly compensated through an upfront payment and subsequent royalty payments for inclusion of their game(s) in catalogs that subscribers can access for the duration of their subscription.[269] Although the structure by which

[269] Alternatively, publishers may be paid a wholesale price (per user) for inclusion in a subscription bundle which becomes payable once a user has crossed a certain threshold in terms of time spent on the game (*e.g.*, 1 hour).

publishers are compensated in multigame subscriptions is different from the traditional model, publishers are still compensated for the sales of their game(s) on the PC game distribution platform under both transaction models. Therefore, subscription models through PC game distribution platforms are not alternatives to Steam for PC game distribution. Rather, subscription models are merely different ways to structure transactions for PC game distribution on existing platforms and are most used for smaller indie games and older games that are part of publishers' back catalog.

185. PC game retailers, such as Humble Bundle, also offer subscription models. However, as discussed above, PC game retailers are merely selling game keys that direct their customers to access the game on digital PC game distribution platforms, like Steam. Thus, subscription services through PC game retailers are not an alternative to Steam for PC game distribution. Rather, subscription services through PC game retailers are merely a different way to structure transactions between PC game retailers and their customers. Furthermore, PC game retailers remain ancillary, complementary channels through which players are directed to Steam for distribution of PC games when transactions between the retailer and its customers are structured as subscriptions.

E. Cloud gaming

186. "Cloud gaming," as described above, is a loosely used term that generally describes the technological ability of players accessing games on a device through a remote server, eliminating the need to download or install the game natively on a device. As of the time of this report, there are meaningful and significant differences in the various ways industry participants have attempted to commercialize "cloud gaming," which include three distinct consumer-facing models: (1) cloud-gaming-as-a-feature, (2) cloud-gaming-as-platform, and (3) cloud-gaming-as-a-complement. None of these models present a viable alternative to Steam for PC game distribution

from the perspective of either PC game players or PC game publishers.[270]

187. Cloud-gaming-as-a-feature, as discussed above, involves bundling cloud gaming with services provided by a consumer-facing distribution platform (*e.g.*, Microsoft's Game Pass and PlayStation Plus). Under this model, most games offered by the platform are still run natively, while a subset of the games are offered remotely through cloud streaming, typically as part of a premium subscription tier. Therefore, to the extent existing digital PC game distribution platforms offer cloud-gaming-as-a-feature, those offerings would merely be incremental value-enhancing additions to the primary offerings of those platforms and not present alternatives to Steam for PC game distribution from the perspective of either PC game players or PC game publishers.

188. Cloud-gaming-as-a-platform, as discussed above, are stand-alone services in which all games on the distribution platform are streamed from the cloud. Such services include Amazon Luna and the now defunct Google Stadia. As with subscription models, large PC game publishers are often unwilling to include their latest and most promising releases in these services. As of the time of this report, cloud-gaming-as-a-platform has seen little commercial success.

189. Cloud-gaming-as-a-platform may plausibly present an alternative to Steam for PC game distribution, in theory. However, there is currently no viable cloud-gaming-as-a-platform service in the PC game landscape. Prior to Google Stadia, OnLive, another attempt to commercialize cloud-gaming-as-a-platform also failed.[271] Further, the failure of Stadia, which was the effort of

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270 For a more in-depth discussion of the current state of "cloud gaming," see Rietveld, Joost, *Cloud Gaming is Not a Distinct Market* (2023), which I prepared and submitted for the UK's Competition and Markets Authority concerning its Microsoft / Activision Blizzard merger inquiry. https://assets.publishing.service.gov.uk/media/642e9e29fbe620000c17dde1/Cloud_gaming_Opinion_.pdf.

271 https://arstechnica.com/gaming/2015/04/onlive-shuts-down-streaming-games-service-sells-patents-to-sony-embargoed-7pm-eastern/.

Google, one of the wealthiest and most technologically sophisticated entities in the world, will surely make PC players weary of using cloud-gaming-as-a-platform and potential entrants weary of developing cloud-gaming-as-a-platform offerings. Therefore, cloud-gaming-as-a-platform is currently not a viable alternative to Steam for PC game distribution from both a PC player and PC publisher perspective. Nor is it my expectation that cloud-gaming-as-a-platform will become a viable alternative to Steam for PC game distribution in the near future.

190. Finally, cloud-gaming-as-a-complement, as discussed above, involves providing specialized cloud-streaming technology to players who wish to stream a subset of games they have purchased elsewhere. With NVIDIA's GeForce Now, for example, players can connect their accounts on Steam, the Epic Games Store, Ubisoft Connect, EA Play, and GOG to access select games already purchased on those distribution platforms.[272] As such, games are not sold under cloud-gaming-as-a-complement models (this model is also referred to as "bring-your-own-game"). Rather, players are provided with enhanced gameplay experiences, typically reserved for high-end gaming PCs, across many devices, including laptops, old PCs, and mobile devices. Given that cloud-gaming-as-a-complement models work along with existing digital PC game distribution platforms, such as Steam, in a complementary manner, they are not viable alternatives to Steam for PC game distribution from the perspective of either PC game players or PC game publishers.

XII. THE EFFECT OF VALVE'S CONTENT-PARITY REQUIREMENTS ON THE PC VIDEO GAME INDUSTRY

191. I understand that Valve imposes parity requirements that prevent publishers from selling superior, differentiated versions of PC games on other storefronts or platforms. This parity

[272] https://www.nvidia.com/cs-cz/geforce-now/games/.

restriction introduces a major roadblock to publishers seeking to shift market share away from Steam to rival platforms (both third-party and self-distribution). Steam's entrenched market position has allowed Valve to increasingly enact platform governance practices that are beneficial to itself but detrimental to competing platforms, developers/publishers, and players. In the absence of any viable alternatives, developers/publishers have no other option but to comply with Valve's parity requirements. By effectively precluding differentiation across platforms and thwarting new platform entrants, Valve's parity requirements also harm PC game players, which would benefit from greater differentiation in the PC game industry, both at the game and platform levels.

A. Platform governance and orchestration

192. Research on platform governance and orchestration considers how "the rules and norms of an ecosystem are set and enforced, and how key members of an ecosystem influence the behavior of other players and outcomes for the ecosystem overall."[273] The topic of how platform ecosystems are governed and by what means the behaviors of an ecosystem's members are orchestrated is arguably one of the most important factors in operating the platform business model. In most platform ecosystems, the vast majority of the rules are set and enforced by the platform company that acts as a hub, or keystone firm, in the overall ecosystem.[274] Platform firms have both the ability and incentive to exert considerable influence over their platform's ecosystem and its individual members (*i.e.*, through rule-setting and enforcement), oftentimes with an eye to increasing the ecosystem's value creation or the platform owner's value capture (*i.e.*, ensuring that the overall time and money spent on the platform increases and that the platform firm appropriates

[273] Rietveld, Joost and Schilling, Melissa A. "Platform Competition: A Systematic and Interdisciplinary Review of the Literature." *Journal of Management*, Vol. 47, No. 6 (July 2021): 1528 – 1563, at 1545.

[274] Iansiti, Marco, and Levien, Roy. "Strategy as Ecology." *Harvard Business Review* (March 2004): 1 – 10.

a growing portion of this revenue). Rules pertaining to the participation of complementors and end users on the platform as well as their conduct once on the platform, or how revenue is being shared with the platform company, can materially affect the overall attractiveness and success of a platform.

193. Platform companies often have a wide array of tools at their disposal to govern their complementors.[275] One of them is the use of price- and content-parity policies, which can impact the competitive dynamics between platforms, through their effects on complementors.

194. Platform price- and content-parity policies are referred to in the academic literature as Platform Most Favored Nation ("PMFN") policies. PMFNs are requirements that pertain to complementors' price setting and product differentiation on competing platforms in relation to their conduct on the focal platform. Typically, these policies dictate that complementors cannot charge lower prices for the same goods or services either on competing platforms or when selling products directly to customers (*e.g.*, through self-distribution platforms). Platform companies often state that the rationale for implementing a PMFN is to avoid consumer freeriding or showrooming on the platform and to ensure that a platform's end users get a "good deal." These purported intentions notwithstanding, research has found that PMFNs often have adverse effects on prices by forcing complementors to keep prices artificially high across all platforms they compete on, even if costs (*e.g.*, in the form of lower commission rates) are lower on some of these platforms; PMFNs prevent complementors from passing on such cost savings to consumers.[276]

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275 Yoffie, David B., and Kwak, Mary. "With Friends Like These: The Art of Managing Complementors." Harvard Business Review (September 2006): 89 – 98.

276 See, for example, Calzada, Joan, Manna, Ester, and Mantovani, Andrea. "Platform price parity clauses and market segmentation." *Journal of Economics and Management Strategy* 31 (2022): 609 – 637; Ennis, Sean, Ivaldi, Marc, and Lagos, Vicente. "Price-Parity Clauses for Hotel Room Booking: Empirical Evidence from Regulatory Change." *Journal of Law and Economics*, Vol. 66 (May 2023): 309 – 331; Mantovani, Andrea,

195. PMFNs have also been found to prevent market entry by low-cost rivals at the platform level—given that complementors are obstructed from using these platforms to offer lower prices to consumers.[277] Recognizing the harmful effect on competition, antitrust regulation in the European Union has banned the use of PMFNs in the context of online travel agencies, such as Booking.com and Expedia, and in the context of Amazon's marketplace.[278]

196. PMFNs that set rules relating to content-parity often have a negative effect on complementors' differentiation across competing platforms.[279] Such clauses prevent complementors from offering exclusive content, additional features, or other services to challenger platforms where the complementor is offered more attractive terms or other incentives to do so (*e.g.*, adapt offerings to match the preferences of the end users on a competing platform). This, in turn, can hamper challenger platforms from competing effectively given that heterogeneity of content and/or features can boost the strength of network effects. As one paper described it:

> The principal antitrust concern is that these MFNs force new platforms to compete on the basis of sheer size, as opposed to the type of content they offer. In a market with strong network effects, this may make entry impossible, thus cementing the leading platform's dominance. The agreements may also diminish innovation by discouraging productive collaborations between new platforms and trading partners.[280]

Piga, Claudio A., and Reggiani, Carlo. "Online platform price parity clauses: Evidence from the EU Booking.com case." *European Economic Review*, Vol. 131, 103625 (2021): 1 – 27.

277 Boik, Andre & Corts, Kenneth S. "The Effects of Platform Most-Favored-Nation Clauses on Competition and Entry." *Journal of Law and Economics*, Vol. 59 (February 2016): 105 – 134; Mansour, Amine. "Identifying the Exclusionary Effect of Across-Platform Parity Agreements: Testing the Tests." *The Antitrust Bulletin*, Vol. 63, No. 2 (2018): 246 – 272.

278 For a discussion, see Baker, Jonathan B. & Scott-Morton, Fiona. "Antitrust Enforcement Against Platform MFNs." *The Yale Law Journal*, Vol. 127, No. 7 (May 2018): 2176 – 2202.

279 Hovenkamp, Erik. "Restraints on Platform Differentiation." 25 Yale *Journal of Law and Technology* 271 (2023): 273 – 308; Mansour, Amine. "Identifying the Exclusionary Effect of Across-Platform Parity Agreements: Testing the Tests." *The Antitrust Bulletin*, Vol. 63, No. 2 (2018): 246 – 272.

280 Hovenkamp, Erik. "Restraints on Platform Differentiation." 25 *Yale Journal of Law and Technology* 271 (2023): pp. 273 – 308, at 308.

B. Publishers on Steam are subject to content- and price-parity requirements

197. Given Steam's large user base and the platform's position as the sole, dominant PC game distribution platform, Valve maintains significant bargaining power over virtually all third-party developers/publishers distributing games through Steam. This bargaining power enables Valve to impose requirements on third-party developers/publishers that they otherwise would likely not agree to. As discussed below, I understand that all, or substantially all, publishers distributing games through Steam are subject to both content- and price- parity requirements—even the largest developers are held to the policies and terms set out by Valve.[281] I also understand that Valve actively enforces these policies, regardless of the publisher's size or standing in the industry.[282]

198. Valve has imposed content-parity requirements on Steam publishers since at least as early as 2011.[283] These requirements prohibit publishers of games on Steam from offering in-game content on competing platforms or on their own distribution platforms that is materially different from in-game content available through Steam. Valve's content-parity requirements appear in sections 2.1 and 2.4 of the Steam Distribution Agreement ("SDA"), which is the standard contract publishers must enter with Valve to distribute games through Steam.[284] I understand that Section 2.1 of the SDA requires parity between Steam and non-Steam game versions and updates, while Section 2.4 of the SDA requires parity between DLC offered through Steam and non-Steam channels. Specifically, the content-parity clauses in the SDA, which I understand are uniform across Valve's SDAs,[285] state (where the term "Company" refers to the game publisher and the

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281 See, for example, Class Certification Report of Steven Schwartz, Ph.D., §4.2.

282 Class Certification Report of Steven Schwartz, Ph.D., §4.2, §6.1.

283 VALVE_ANT_1132730. See also VALVE_ANT_0022321.

284 See, for example, 30(b)(6) Deposition of Erik Peterson, November 15, 2023, Exhibit 295.

285 Class Certification Report of Steven Schwartz, Ph.D., §4.2.

term "Application" refers to computer games or other applications):

> **2.1 Delivery.** … Company shall submit to Steam any Localized Versions and Application Updates (in beta and final form) when available, but in no event later than they are provided to any other third party for commercial release. Company shall provide these copies in object code form, in whatever format Valve reasonably requests.
>
> …
>
> **2.4 DLC**. If Company distributes the Application through any other (non-Steam) distribution channel, and if Company distributes any material DLC for the Application through that other channel, it will deliver the DLC to Valve at the same time such that Steam Account Owners will receive comparable DLC with customers acquiring the Application through other channels. Company is free to offer special and unique promotional content through other distribution channels, provided that material parity is maintained between Steam Account Owners and users of other distribution channels who make a comparable investment in the Application and the associated DLC.[286]

199. Communications between developers/publishers and Valve employees illustrate how Valve's content-parity clauses apply in practice. For example, [redacted]

> [redacted]

> [redacted]

[286] 30(b)(6) Deposition of Erik Peterson, November 15, 2023, Exhibit 295.

[redacted].[287]

200. Valve's content-parity requirements also extend to content sold through non-Steam retail channels via Steam Keys. The September 2023 Steam Keys Rules and Guidelines, for example, stipulate that Steam partners can only request Steam Keys for content (including DLC) that is available for purchase or download on Steam.[288] Since 2018, developers have also been required to agree to Valve's Steam Key-related content-parity requirements when submitting a Steam Key request through Valve's Steam Key request wizard.[289]

201. I have reviewed the evidence collected in Dr. Schwartz's report that Steam publishers are aware of Valve's parity requirements,[290] that Valve enforces its content-parity requirements, and that enforcement tactics utilized by Valve include removing or threatening to remove the games or promotions of publishers Valve deems in violation of its policy.[291]

202. In addition to its content-parity requirements, I have reviewed the evidence collected in Dr. Schwartz's report that Valve has also maintained a price-parity policy since at least as early as 2009.[292] Valve's price-parity policy prohibits Steam publishers/developers from offering a game through a non-Steam channel for a price lower than the game's Steam price.[293] The policy further requires that discounts offered through non-Steam channels are matched on Steam "within a

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287 Deposition of Tom Giardino, November 2, 2023, Exhibit 196.

288 Deposition of Kristian Miller, October 3, 2023, Exhibit 68.

289 https://steamcommunity.com/groups/steamworks/announcements/detail/1652133167126418778; Deposition of Tom Giardino, November 2, 2023, Exhibit 186.

290 Class Certification Report of Steven Schwartz, Ph.D., §4.2.

291 Class Certification Report of Steven Schwartz, Ph.D., §4.2, §6.1.

292 Class Certification Report of Steven Schwartz, Ph.D., §6.1.

293 Class Certification Report of Steven Schwartz, Ph.D., §4.2, §6.1.

reasonable amount of time."[294]

203. Though Valve's price-parity policy is not included in the SDA, it is communicated to publishers and developers by Valve directly (via emails, over the phone, and in person) and in the Steamworks Documentation regarding Steam Keys.[295] I have reviewed the evidence collected in Dr. Schwartz's report that Steam publishers, including the largest publishers in the PC game industry, are aware of Valve's price-parity policy,[296] and that Valve enforces its price-parity policy using similar methods to those used in Valve's enforcement of its content-parity policy.[297]

C. PC game publishers would differentiate game content in the absence of Valve's content-parity requirements

204. PC game publishers have an incentive to differentiate their game content to effectively supply the diverse and heterogeneous PC game player market. However, Valve's content-parity requirements preclude publishers from pursuing content differentiation strategies.

205. Offering special features or additional content would be an effective means of differentiation for PC game publishers, enabling them to cater to and reach more of the PC game player market. Additionally, in-game monetization strategies that enable longer lifecycles for games have become more common in recent years. In the absence of Valve's content-parity requirements, PC game developers/publishers could take a base game and make their offerings unique to, and within, each platform through which the game is distributed by adding incremental features, additional content, or platform-specific in-game monetization.

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294 Class Certification Report of Steven Schwartz, Ph.D., §4.2.

295 Class Certification Report of Steven Schwartz, Ph.D., §4.2, §6.1.

296 Class Certification Report of Steven Schwartz, Ph.D., §4.2.

297 Class Certification Report of Steven Schwartz, Ph.D., §4.2, §6.1.

206. Under a scenario that encourages content differentiation, developers/publishers would have the flexibility and control to determine how to best supply heterogenous player demand for their PC game content. However, such a scenario is in stark contrast to the current status of the PC game industry, in which PC game developers/publishers are subject to Valve's content-parity requirements and left with just two unappealing options regarding content differentiation: (1) distribute identical content on Steam and other distribution platforms with uniform pricing, or (2) forego distributing content on Steam and distribute content through other distribution platforms.

207. Given Steam's dominance of the PC game distribution platform market and the absence of viable alternatives, foregoing distribution on Steam is generally not a viable option for PC game developers/publishers—unless they are provided with guaranteed compensation for doing so, such as Epic Games has done in its attempt to make the Epic Games Store a viable alternative to Steam. Even under such an arrangement with Epic Games, however, there is generally no increased content differentiation. Rather, content is merely shifted from Steam to the Epic Games Store (for a limited period). Thus, Valve's content-parity requirements effectively suffocate what would likely otherwise be a proliferation of differentiated content throughout the PC game industry.

208. Different platforms can cater to certain segments of the broad heterogenous PC player market. For example, research has found that newer platforms tend to have a higher concentration of early innovation adopters relative to more established platforms, which appeal to a mix of early and late adopters. Compared to late adopters, early adopters tend to be (1) less risk averse, (2) more novelty seeking, (3) have a higher willingness-to-pay for innovations, and (4) tend to be more independent in their decision making than late adopters of an innovation.[298] These adopter

[298] Rogers, Everett M., "Innovativeness and Adopter Categories," *Diffusion of Innovations* 5th Edition, The Free

characteristics apply not only to the base innovation (*i.e.*, the distribution platform), but also to any complementary innovations (*i.e.*, games released for the platform). Given these tendencies of early and late adopters, certain video game content will likely perform well earlier rather than later in a platform's lifecycle. For example, video games based on new intellectual property (rather than sequels or games based on existing media franchises) would sell relatively more units if released early in a platform's life rather than after it has matured. Such video games are considered more attractive to early adopters given their novelty and riskiness.[299] On the other side, games that feature licensed content (*e.g.*, movie adaptations) and those that are pre-/sequels tend to appeal more to late adopters and would thus benefit from being released on more mature platforms.

209. The differences in PC game user preferences are evidenced by the distinct positioning of different video game platforms and retailers. For example, GOG (short for "Good Old Games") has historically catered towards players who enjoy classic games.[300] Humble Bundle, which donates a portion of each sale to charity, may appeal to a user base that is more socially conscious.[301] The Chinese companies Tencent and Netease have introduced their own distribution platforms that mostly cater to audiences in Asia.[302] Differences in user bases are also present among the console platforms. Nintendo, for example, tends to attract an audience that is more casual than Sony's audience and skews less male than Microsoft's audience.[303]

Press, (2003), pp. 282–285.

299 Rietveld, J., & Eggers, J. P. (2018). Demand heterogeneity in platform markets: Implications for complementors. *Organization Science*, 29(2), 304-322.

300 https://www.thegamer.com/gog-return-to-classic-games-roots/.

301 https://www.humblebundle.com/about?_gl=1*po8di1*_up*MQ..&gclid=Cj0KCQiA5fetBhC9ARIsAP1UMgGv9Wc-C4cuFYxYrIjy4p4AnX7ORwEghLgsGG8Rji8ewD8S-6olIPsaAvmxEALw_wcB.

302 https://www.wegame.com.cn/home/; https://technode.com/2020/01/08/netease-takes-aim-at-tencent-with-fever-game-store-launch/.

303 https://www.start.io/blog/nintendo-target-market-segmentation-marketing-strategy-main-competitors-statistics/.

210. The existence of distinct preferences among different platforms' user bases has important implications for PC game publisher/developer product development and marketing strategies across platforms, implying the need for differentiation and the need for a tailored approach from one platform to the next.[304] Absent Valve's content-parity requirements, publishers could implement platform-exclusive features and content, such as those seen within the console segment of the video game market. For example, Namco, the publisher of the cross-platform console game *Soul Calibur II*, featured different "guest characters" in the PlayStation 2, Xbox, and GameCube versions of the game. In particular, the Nintendo GameCube version of *Soul Calibur II* featured the Nintendo-exclusive character Link from the *Legend of Zelda* series of games, the PlayStation 2 version featured Heihachi Mishima from the (at the time) PlayStation-exclusive *Tekken* series of games, and the Xbox version featured the comic book character Spawn.[305] Tailoring *Soul Calibur II* to different platforms in this manner allowed Namco to increase the appeal of its game among each different platforms' respective user base, likely increasing the game's sales.[306]

211. *Soul Calibur II* illustrates how content-parity requirements can negatively impact product quality: If Namco had been required to maintain content-parity across console platforms, it is unlikely Nintendo would have permitted Namco to feature Nintendo's Link character in non-Nintendo *Soul Calibur II* game versions, and thus it is unlikely any version of *Soul Calibur II*

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304 Rietveld, J., & Eggers, J. P. (2018). Demand heterogeneity in platform markets: Implications for complementors. *Organization Science*, 29(2), 304-322.

305 https://soulcalibur.fandom.com/wiki/Soulcalibur_II#Ports.

306 The addition of the Nintendo character Link was particularly popular among Nintendo GameCube users. https://goombastomp.com/link-in-soulcalibur-ii-the-gamecubes-best-third-party-crossover/. In a Reddit post discussing Soul Calibur II guest characters, one player wrote, "Link was the one of the main reasons I bought Soul Calibur II … Because of that—and how great the game was—I'm pretty much a lifelong fan." https://www.reddit.com/r/SoulCalibur/comments/12tubzw/best_soulcalibur_2_guest_character/. Players expressed similar sentiments on Google reviews, including "LINK IS SUCH A GREAT EDITION TO THE ROSTER." and "I can play as Link. Best game ever imo." https://www.google.com/search?q=soul+calibur+2+review.

would have featured Link. Absent Valve's parity requirements, publishers could employ similar content differentiation strategies across PC game platforms, resulting in a better match between games and their respective platforms' user bases and thus benefit both publishers and players.

212. In addition to catering to unique preferences of a platform's user base, in the absence of Valve's content-parity requirements, developers/publishers could also use differentiated PC game content to steer consumers towards particular distribution platforms. For example, publishers could use exclusive in-game content to steer consumers towards third-party distribution platforms with more favorable commission rates, or towards platforms that offer incentives to the publisher in exchange for exclusive in-game content. A publisher might also want to steer players towards a platform that enables in-game monetization functionalities not available on Steam. However, as they stand, Valve's content-parity requirements effectively insulate Steam from developers/publishers steering users away from Steam to rival platforms on the basis of content differentiation.

213. Evidence I reviewed in this matter indicates that Valve's content-parity requirements have prevented steering of this kind. [redacted]

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307 https://techcrunch.com/2017/02/27/twitch-will-sell-video-games-on-its-site-starting-this-spring/.

308 30(b)(6) Deposition of Erik Peterson, November 15, 2023, Exhibit 292.

[redacted][310]

214. Absent Valve's content-parity requirements, publishers of games with fully integrated value chains could also use differentiated content as an incentive to steer consumers to their own self-distribution platforms. [redacted].[312]

215. For at least the reasons discussed above, were it not for Valve's content-parity requirements, PC game developers/publishers would increase content differentiation across and within PC game distribution platforms and supply the heterogeneous demand for PC games more effectively.

D. Rival PC game platforms would compete with Steam based on content differentiation in the absence of Valve's content-parity requirements

216. Valve's content-parity requirements effectively preclude competing digital PC game

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309 30(b)(6) Deposition of Erik Peterson, November 15, 2023, Exhibit 292.

310 30(b)(6) Deposition of Erik Peterson, November 15, 2023, Exhibit 292.

311 Deposition of Tom Giardino, November 2, 2023, Exhibit 196.

312 Deposition of Augusta Butlin, October 11, 2023, Exhibit 131.

distribution platforms from differentiating the content of their offerings from Steam's offerings, thereby making it considerably more difficult for challenger platforms to compete with Steam and gain market share. Were it not for Valve's content-parity requirements, enhanced content differentiation and lower prices would enable rival PC game distribution platforms to compete with Steam more effectively.

217. With the existence of Valve's content-parity requirements in the PC game industry, competing platforms can currently only meaningfully differentiate the content of their offerings through games that are not available through Steam. However, unless a competing platform is willing to pay large amounts of money to a publisher in return for game exclusivity, as Epic Games is attempting to do with the Epic Games Store,[313] it is unlikely that a given publisher will make its games exclusively available through non-Steam platforms. This is because non-Steam platforms cannot provide similarly large player bases for these game publishers to distribute their games to. Thus, in light of Valve's content-parity requirements, competing platforms are limited to forms of content-based differentiation that are cost prohibitive for rival platforms and largely unsustainable.

218. Absent Valve's content-parity requirements, competing platforms could better cater to different audiences by offering game versions that are differentiated from their Steam equivalents. From the perspective of a competing platform, acquiring exclusive in-game content or DLC from a publisher would be easier and less expensive than acquiring full game exclusivity, given that the competing platform would not need to compensate the publisher for not distributing its game through Steam. Further, given the heterogeneity in user preferences across different platforms, publishers would be incentivized to offer differentiated content across platforms without further

313 https://venturebeat.com/games/what-self-publishing-on-the-epic-games-store-means-for-gaming/.

incentive from the platform owner. With the ability to differentiate offerings without the expense of compensating publishers for not distributing their games through Steam, the costs of competing with Steam based on content would decrease significantly. This, in turn, would increase the number of viable PC game platform competitors and enhance the variety of offerings among competitors.

219. Evidence I have reviewed in this matter indicates that, absent Valve's content-parity requirements, competing platforms would indeed pursue a strategy of offering game versions that are differentiated from their Steam counterparts. [redacted].[316]

[redacted]

314 30(b)(6) Deposition of Erik Peterson, November 15, 2023, Exhibit 292.

315 https://www.neteasegames.com/.

316 Deposition of Augusta Butlin, October 11, 2023, Exhibit 130. [redacted]

[redacted].[320]

221. In addition to precluding competing platforms' ability to offer differentiated PC game content, Valve's content-parity requirements have likely also kept competing platforms from investing in or creating novel platform features. Such features could potentially enhance players' gameplay experiences or introduce novel ways to monetize games or in-game components. For example, certain early Steam updates as mentioned above, including Steam Workshop and Steam Wallet, facilitated the introduction of freemium models and user-generated content for PC games. Presumably, game content employing platform-specific features not available on Steam would run

317 [redacted] See Deposition of Augusta Butlin, October 11, 2023, Exhibit 121.

318 30(b)(6) Deposition of DJ Powers, September 29, 2023, Exhibit 55.

319 VALVE_ANT_0967621 to VALVE_ANT_0967644 at VALVE_ANT_0967635-638.

320 VALVE_ANT_1221288 to VALVE_ANT_1221291.

afoul of Valve's content-parity requirements and publishers would not incorporate them into their games. Thus, without the expectation that developers/publishers will create and offer games that utilize novel platform-specific features, rival platforms have little incentive to invest in and create such features, further limiting competition among digital PC game distribution platforms.

222. As noted above, in addition to Valve's content-parity requirements, Valve also maintains price-parity requirements.[321] Valve's content- and price-parity requirements work together to preclude differentiation among competitor platforms and cement Steam's position as the sole, dominant PC game distribution platform. Broadly speaking, to win customers from a dominant competitor, a firm can differentiate its offerings in two ways: (1) it can offer better value, or (2) it can offer lower prices (or some combination of both). As discussed above, Valve's content-parity requirements make it considerably more difficult for competitor platforms to succeed with a "better value" strategy. At the same time, Valve's price-parity requirements make it considerably more difficult to differentiate with a "lower price" strategy. To illustrate, the Epic Games Store tries to compete on both value and price—it provides exclusive content for consumers (high value)[322] and lower commission rates to developers (lower price).[323] However, these strategies are exceedingly expensive on both dimensions because (1) Epic Games must pay developers/publishers, or provide them with guarantees, to not distribute their games through Steam at all because publishers/developers cannot offer differentiated content without violating Steam's content-parity requirements, and (2) developers/publishers cannot pass on cost savings to consumers without violating Steam's price-parity requirements. In the absence of Valve's parity requirements, it is

321 Class Certification Report of Steven Schwartz, Ph.D., §4.2, §6.1.

322 https://venturebeat.com/games/what-self-publishing-on-the-epic-games-store-means-for-gaming/.

323 https://www.theverge.com/2023/3/9/23630864/epic-games-store-self-publish-tools-ratings.

likely that Epic Game's efforts would be less costly, more effective, or a combination of both.

223. The difficulty Valve's parity requirements pose to competing platforms is reflected by the fact that several PC game distribution platforms have exited the market (*e.g.*, Impulse, GameFly, Discord). As mentioned above, others, such as Uplay and EA Origin, have pivoted from a third-party distribution platform model to an exclusively self-distribution platform model. Furthermore, Epic Games is attempting to compete with Steam by heavily subsidizing its distribution platform with revenues generated from its flagship game, *Fortnite*, which generated estimated annual revenues between $3.4 billion and $5.4 billion from 2018 through 2022.[324] However, in a March 2023 interview, Epic Games CEO, Tim Sweeney, indicated that the Epic Games Store was not yet profitable.[325] As Sweeney explained, though "the cost of operating the [Epic Game] store is significantly less than 12% [*i.e.*, the revenue share Epic Games collects from developers] … we have this huge up-front investment made up of exclusive [game] rights and other things to jump-start the store."[326] In the interview, Sweeney indicated that Epic continues to make "heavy investment in exclusives," stating:

> Whether we intend to wind down the heavy investment in exclusives or continue to make those for a few more years, these are decisions we make on a year-by-year basis. So far we're still investing. Not at the staggering numbers as previously, but we're still investing.[327]

224. However, despite its projection in 2019 that the Epic Games Store would capture between

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324 https://www.businessofapps.com/data/fortnite-statistics/.

325 In the interview, Tim Sweeney stated that the Epic Games Store is "well on the way to being a business that has achieved a position where it has the potential to be profitable on a stand-alone basis." https://venturebeat.com/games/what-self-publishing-on-the-epic-games-store-means-for-gaming/. Steve Allison testified in November 2023 that the Epic Games Store had yet to become profitable. https://www.theverge.com/23945184/epic-v-google-fortnite-play-store-antitrust-trial-updates/archives/25.

326 https://venturebeat.com/games/what-self-publishing-on-the-epic-games-store-means-for-gaming/.

327 https://venturebeat.com/games/what-self-publishing-on-the-epic-games-store-means-for-gaming/.

35% and 50% "of all PC revenue" depending on Steam's response, the total $840 million generated on the Epic Games Store in 2021 (including both third-party and Epic's proprietary games) was [redacted]. Thus, at least as of the end of 2021, after three full years of operations, Epic Games had fallen far short of its projection that it would capture 35%-50% "of all PC revenue."

225. In the absence of Valve's content-parity requirements, rival PC game distribution platforms would compete based on content differentiation or low-cost strategies to dislodge market share from Steam. Together, Valve's content- and price-parity requirements preclude competing platforms from differentiating their offerings based on both value and price. Consequently, Valve's parity requirements preclude rival PC game distribution platforms from competing with Steam effectively and enable Steam to maintain its dominant position.

XIII. CONCLUSIONS

226. As summarized above and discussed throughout this report, the PC video game segment has grown and increased in popularity among consumers and PC game developers/publishers since digital distribution has replaced physical distribution of PC games. While multi-homing across device types is prevalent, it is complementary in nature. Steam has long stood as the single dominant digital PC game distribution platform, and none of the current offerings in the PC game landscape are viable alternatives for PC game distribution. Steam's dominant position has enabled it to implement and enforce undesirable parity requirements. In the absence of Valve's parity requirements, PC game developers/publishers would increase content differentiation and competition among PC game distribution platforms would be enhanced, benefiting PC game

developers/publishers and PC game players.

227. As noted above, if additional data, testimony, or other information that is relevant to my analyses and opinions become available to me after the issuance of this report, I intend to consider that information and may modify or update my analysis and opinions as I deem necessary.

Dated February 8, 2024
Respectfully submitted,

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ACADEMIC APPOINTMENTS

UCL School of Management, University College London

Associate Professor of Strategic Management	2022-present
Assistant Professor of Strategic Management	2018-2022

University of Groningen, Faculty of Economics and Business

Visiting Professor of Strategy and Innovation Management	2021-2024

Rotterdam School of Management, Erasmus University

Assistant Professor of Strategic Management	2015-2018

EDUCATION

2015 **City, University of London, Bayes Business School (formerly Cass)**
Doctor of Philosophy (PhD)
Dissertation: *Value Creation from Complements in Platform Markets: Studies on the Video Game Industry* Committee: Stefan Haefliger, Melissa Schilling, JP Eggers

- Best Dissertation Award Finalist, TIMES Division, INFORMS (2016)
- Best Dissertation Award Finalist, TIM Division, AoM (2016)

2015 **New York University, Stern School of Business**
Visiting Doctoral Student, department of Management and Organizations
Courses audited: *Creativity & Innovation*; *Econometrics*; *Econometrics II*; *Strategic Management*; *Digital Economics*. Sponsor: Melissa Schilling

2010 **University of Groningen, Faculty of Economics and Business**
Master of Science (MSc), Strategy and Innovation (*cum laude*)

2008 **University of Groningen, Faculty of Economics and Business**
Bachelor of Science (BSc), Business Administration

PEER REVIEWED PUBLICATIONS

Benischke M, **Rietveld J**, Slangen A (2023) Within-Firm Variation in the Liability of Foreignness: A Demand-Based Perspective. *Journal of Management,* 49(5): 1738-1765.

Rietveld J, Ploog, JN (2022) On Top of the Game? The Double-Edged Sword of Incorporating Social Features into Freemium Products, *Strategic Management Journal,* 43(6):1182-1207. (Video abstract)

- Media coverage: Dutch Financial Times (Financieel Dagblad), SMS blog

Rietveld J, Seamans R, Meggiorin K (2021) Market Orchestrators: The Effects of Certification on Platforms and Their Complementors. *Strategy Science,* 6(3): 244-264.

- Media coverage: Talking About Platforms (podcast)

Rietveld J, Schilling MA (2021) Platform Competition: A Systematic and Interdisciplinary Review of the Literature. *Journal of Management*, 47(6): 1528–1563.

- Companion websites: platformpapers.com/ | platformpapers.substack.com

Rietveld J, Ploog J, Nieborg D (2020) Coevolution of Platform Dominance and Governance Strategies: Effects on Complementor Performance Outcomes. *Academy of Management Discoveries,* 6(3): 488-513. (Animated abstract, Interactive data visualizations)

- Best Paper Finalist, *SMS Special Conference Oslo* (2018)
- Media coverage: Mobile Marketing, Business Computing, Business of Apps, UK Tech News, Medium, Acquisition International, TechCrunch, Competition and Markets Authority (CMA) - Digital Markets Taskforce, Concurrences Antitrust, National Technology News (NTN), Department of Play (1), (2), Cory Doctorow.

Bellavitis C, **Rietveld J**, Filatotchev I (2020) The Effects of Repeated Co-Investments on the Performance of VC Syndicates: A Relational Agency Perspective. *Strategic Entrepreneurship Journal,* 14(2): 240-264.

- Media coverage: The European, BizEd, SMS blog

Rietveld J, Schilling MA, Bellavitis C (2019) Platform Strategy: Managing Ecosystem Value Through Selective Promotion of Complements. *Organization Science,* 30(6): 1232-1251.

- An abbreviated version is published in Management Insights
- Media coverage: Vox Recode

Rietveld J, Eggers JP (2018) Demand Heterogeneity in Platform Markets: Implications for Complementors. *Organization Science,* 29(2): 304-322.

- Nominated by INFORMS for the *Gomory Industry Studies Award* (2019)

Rietveld J (2018) Creating and Capturing Value from Freemium Business Models: A Demand-Side Perspective. *Strategic Entrepreneurship Journal,* 12(2): 171-193.

- Lead article
- Among the Top 20 most downloaded papers published in 2018 (2019)
- *Academy of Management (AoM) Best Paper Proceedings* (2016)
- Media coverage: RSM Discovery, BNR Radio, Gamekings

Broekhuizen TLJ, Lampel J, **Rietveld J** (2013) New Horizons or a Strategic Mirage? Artist-led-distribution Versus Alliance Strategy in the Video Game Industry. *Research Policy,* 42(4): 954-964.

WORK-IN-PROGRESS

Ploog J, **Rietveld J.** Rolling the Dice: Resolving Demand Uncertainty in Markets With Partial Network Effects. Second revision submitted, *Academy of Management Journal*.

Khanagha S, Snihur Y, Ansari S, **Rietveld J**. Navigating Nascent Platform Legitimacy: A Framework for the Dynamic Deployment of Framing Strategies. Second revision invited, *Academy of Management Review*.

Forti E, Piazza A, **Rietveld J.** A Community-Embedded Theory of Organizational Responsiveness to Social Issues: CrossFit in the Crosshair. First revision invited, *Administrative Science Quarterly*.

Haans R, **Rietveld J.** Is Comparison the Thief of Joy? Antecedents and Consequences of Getting Compared by Information Intermediaries. Reject and resubmit, *Strategic Management Journal*.

- Winner of the SMS CSIG Best Proposal Award for Creativity in Research

Rietveld J. Digital Dominance: Why Digital Firms Have More Expansive Leadership Positions. Submitted, *Academy of Management Perspectives*.

Schilling MA, **Rietveld J**. To the Beat of the Same Drum: Causal Factors in Strategic Synchronization. Working paper.

Ishihara M, **Rietveld J**. The Effect of Mergers on Product Quality, Innovativeness, and Performance: Evidence from the UK Video Game Industry. Working paper.

BOOK CHAPTERS, CONFERENCE PROCEEDINGS, AND OTHER PUBLICATIONS

Rietveld J (2023) Microsoft and Activision: the big questions that will decide whether the US$68 billion deal goes ahead. *The Conversation*.

Rietveld J (2016) Creating Value through the Freemium Business Model: A Consumer Perspective. *Academy of Management Best Paper Proceedings.*

Rietveld J (2014) Nintendo: Fighting the Video Game Console Wars, in Mintzberg H *et al. The Strategy Process*, Fifth Edition, Pearson Education (under supervision of J. Lampel).

Rietveld J (2011) Profiting from Digitally Distributed Cultural Products: The Case of Content Producers in the Video Games Industry. In: *The Nature of the New Firm* (eds. KJ McCarthy, M Fiolet, W Dolfsma). Edward Elgar, 100-120.

GRANTS

2017	ERIM funding for Research Assistance (€5,000)
2017	ERIM funding for Outward Research Visit (€2,300)
2016	ERIM funding for Outward Research Visit (€4,000)
2015	NYU Adjunct Faculty Professional Development Fund ($1,000)

INVITED TALKS

2024	ESADE Business School, Entrepreneurship Institute (scheduled)
2023	New York University, Stern School of Business
	Syracuse University, Whitman School of Management
	University of Zurich, department of Business Administration
	Platform Leaders, The Future of Digital Platforms conference
	UCL Laws, panel on The Rise of Ecosystem Theories: Where are we after Microsoft/Activision and Booking/etraveli?
	UCL-USC Cross-disciplinary Conference on Digital Platforms
	Ecosystems and their Role in Competition Law, British Institute of International and Comparative Law (BIICL)
	Cloud gaming as a new frontier: Competition and Regulatory challenges

	Stockholm School of Economics, House of Innovation
	Keynote on digital platforms at DIEM and VU Knowledge Hub for Ecosystems
2022	Weizenbaum Institute, TU Berlin (PLAMADISO series)
	USC Marshall webinar on Video Games and Competition Program
	Rotterdam School of Management, Business Information Management
	University of Groningen, Innovation Management & Strategy
2021	HEC Lausanne, department of Strategy, Globalization and Society
	IE Business School, Facebook event on Ecosystem Governance
	IESEG School of Management, Management and Society department
2020	London Business School, Strategy and Entrepreneurship group
	USC Marshall, department of Data Sciences and Operations
	Oxford University, Platform Economy Interest Group
	Technical University of Munich, TUM School of Management
	Ludwig Maximilian University (LMU) of Munich, ORG Seminar
	ESMT Berlin
	New Zealand Commerce Commission (ComCom)
	Facebook, Gaming Division
2019	Goldsmiths University, Institute of Management Studies
	Vrije Universiteit (VU) Amsterdam, KIN Center for Digital Innovation
	London50 Conference (London Business School)
	NYU Stern Digital Innovation Conference on Platform Strategy
	New Technologies and Business Regulation Conference (University of Florida)
2017	Harvard Business School, Strategy Unit
	University College London, Strategy and Entrepreneurship
	INSEAD, Strategy area
	IESE Business School, Strategy department
	Imperial College London, Entrepreneurship and Innovation
	Imperial Innovation & Entrepreneurship Conversation
	Guerrilla Games (Sony Computer Entertainment)
2016	University of Liverpool Management School, Strategy department
	Vrije Universiteit (VU) Amsterdam, KIN Center for Digital Innovation
2015	Ludwig Maximilian University (LMU) of Munich, ISTO
	Catholic University of Louvain, Economics and Business
2014	USC Marshall, department of Management and Organization
	LUISS Business School
	HEC Montreal, department of International Business
	HEC Paris, Strategy & Business Policy
	Rotterdam School of Management, Strategic Management & Entrepreneurship

SELECTED CONFERENCE PRESENTATIONS

2023	Rolling the Dice: Resolving Demand Uncertainty in Markets with Heterogeneous Network Effects, *AoM 83rd Annual Meeting* (Boston, MA)

Rolling the Dice: Resolving Demand Uncertainty in Markets with Heterogeneous Network Effects, *Sumantra Ghoshal Conference* (London, UK)
Rolling the Dice: Resolving Demand Uncertainty in Markets with Heterogeneous Network Effects, *Imperial Conversations Conference* (London, UK)
Is Comparison the Thief of Joy? Antecedents and Consequences of Getting Compared by Information Intermediaries, *3rd Competitive Dynamics Conference* (London, UK)

2022 Panelist, Ecosystem Strategy: Value Creation Outside The Boundaries Of The Firm, *42nd Annual SMS Conference* (London, UK)
Too Close to the Sun? Antecedents and Implications of Being Compared to Exemplars. *42nd Annual SMS Conference* (London, UK)
Platform evolution and governance strategy, PDW presentation. *AoM 82nd Annual Meeting* (Seattle, WA)
Too Close to the Sun? Antecedents and Implications of Being Compared to Exemplars. *5th Annual Strategy Science Conference* (New York, NY)
Too Close to the Sun? Antecedents and Implications of Being Compared to Exemplars. *Creative Industries Conference (CIC)* (Amsterdam, NL)

2021 Paper discussant, *Platform Strategy Research Symposium,*
Market Orchestrators: The Effects of Certification on Platforms and Their Complementors. Symposium: Platforms, Platform Characteristics, and Complementor Performance and Strategy, *81st Annual AoM Meeting* (Virtual).
Digital Dominance: How Market Leaders Use Digital Technologies for Sustained Competitive Advantage. Panel: A Demand Side Perspective in Cooperative Strategy: Exploring Research Opportunities, *41st Annual SMS Conference* (Virtual).

2019 Freemium Killer Apps. *39th Annual SMS Conference* (Minneapolis, MN)
Platform Ecosystem Evolution: Implications for Complementors. *79th Annual AoM Meeting* (Boston, MA)
Market Orchestrators: The Effects of Platform Certification on Complementor Behavior and Performance. *23rd Annual Conference of the Society for Institutional & Organizational Economics* (Stockholm, SE)

2018 Platform Ecosystem Evolution: Towards an Integrative Framework and Implications for Complementors. *Digital Transformation and Strategy Forum* (London, UK)
Market Orchestrators: The effect of platform certification on complementor performance and behavior in the context of Kiva (2010-2013). *Platform Strategy Research Symposium* (Boston, MA)
Market Orchestrators: The effect of platform certification on complementor performance and behavior in the context of Kiva (2010-2013). *SMS Special Conference Oslo* (Oslo, NOR)
Platform Ecosystem Evolution: Towards an Integrative Framework and Implications for Complementors. *SMS Special Conference Oslo* (Oslo, NOR)

2017 The Effect of Mergers on Product Quality, Innovativeness, and Performance. *77th Annual AoM Meeting* (Atlanta, GA)
Demand Heterogeneity in Platform Markets: Implications for Complementors. *DRUID Annual Meeting* (New York, NY)

Creating and Capturing Value in Platform Ecosystems through Selective Promotion of Complements. *Sumantra Ghoshal Conference* (London, UK)

2016 Demand Heterogeneity and the Adoption of Platform Complements. *INFORMS Annual Meeting: Emerging Scholars in Technology Management* (Nashville, TN)

Creating Value through the Freemium Business Model: A Demand Perspective. *36th Annual SMS Conference* (Berlin, DE)

Creating Value through the Freemium Business Model: A Demand Perspective. *The 10th Ratio Colloquium for Young Social Scientists* (Stockholm, SE)

Reload and Relaunch: Strategic Governance of Platform Ecosystems. *Platform Strategy Research Symposium* (Boston, MA).

Reload and Relaunch: Strategic Governance of Platform Ecosystems. *76th Annual AoM Meeting* (Anaheim, CA).

Creating Value through the Freemium Business Model: A Consumer Perspective. *76th Annual AoM Meeting* (Anaheim, CA)

Creating Value through the Freemium Business Model: A Consumer Perspective. *Digital Innovation Worksho*p (Amsterdam, NL)

2014 Complements Adoption in Two-Sided Markets: Evidence from the UK Market for Console Video Games. *Platform Strategy Research Symposium 2014* (Boston, MA)

2013 The Second Time Around: Products Re-release and Resource Complementarity in the Market for Video Games. *23rd Annual AoM Meeting* (Orlando, FL)

2012 The Second Time Around: Product Re-releases and Resource Complementarity in the Market for Video Games. *32nd Annual SMS Conference* (Prague, CZ)

New Horizons or a Strategic Mirage? Artist-led-distribution versus Alliance Strategy in the Video Game Industry. *32nd Annual SMS Conference* (Prague, CZ)

TEACHING

Business Strategy, core course in the Master (MSc) in Management program, UCL School of Management, University College London. Evaluation 2021: 4.45/5

- Nominated for the Inspiring Teaching Delivery award, Students' Union (2023)

Industrial Organization ('Marktcontext'), core undergraduate course, Rotterdam School of Management, Erasmus (Rotterdam, NL). Evaluation 2017: 8.4/10

- Professor of the Year, *Student Representative Council* (2016)

Competitive Strategies Within and Between Platform Markets, MSc. elective, Rotterdam School of Management, Erasmus (Rotterdam, NL). Evaluation 2018: 4.7/5

Video Games: Culture and Industry, Undergraduate level, New York University, Dept. of Media Culture and Communication (New York, NY). Evaluation 2015: 4.7/5.

Industry Analysis, One-year conservatory Game Design, New York Film Academy (New York, NY). Evaluation 2014: 4.9/5

Strategic Management, BSc. Erasmus students, Catholic University of Leuven, VIVES (Kortrijk, BE). Evaluation 2013: 4.6/5

PROFESSIONAL SERVICE

UCL Promotions Committee, Member (2023)
UCL School of Management, Hiring Committee, Chair (2020-2022)

Editorial review board:

Strategy Science (2022-)
Journal of Management (2021-)
Strategic Entrepreneurship Journal (2021-)
Strategic Management Journal (2020-)

- Best Reviewer, 2019-2020

Associate Program Chair for the Competitive Strategy Interest Group at SMS (2024-2026)
Member of the TIM division Research Committee (2022-2024)
Reviewer for Best Student paper, TIM division, AoM 82nd Annual Meeting (2022)
Reviewer for PhD Paper Prize competition at the SMS 41st Annual Conference (2021)
Reviewer for Best Paper Prize competition at the SMS 41st Annual Conference (2021)
Reviewer for INFORMS/Organization Science Dissertation Proposal Competition (2021)
Reviewer for TIM division Best Paper Prize at the AoM 77th Annual Meeting (2017)

Ad-hoc reviewer: *Academy of Management Discoveries (2019-2020), Academy of Management Journal (2019-2020, 2022), Academy of Management Perspectives (2022), Academy of Management Review (2017, 2021, 2023), Administrative Science Quarterly (2018, 2022), Information Systems Research (2016, 2017, 2019), Journal of Management (2016, 2018-2023), Journal of Marketing (2019), Management Science (2018-2024), Organization Science (2018-2021, 2023), Research Policy (2019-2021, 2023), Strategic Entrepreneurship Journal (2017-2021, 2023-2024)*, *Strategic Management Journal (2017-2024), Strategy Science (2020-2023),* and other journals.

2023 Faculty mentor at the TIM & Organization Science paper development workshop
Co-organizer and founder of the inaugural summit of the *European Digital Platforms Research Network* (EU-DPRN; Milan, It). Two-day conference and community.
Symposium organizer, Platform Strategy in a Global Context. *AoM 83rd Annual Meeting* (Boston, MA). Co-organized with Liang Chen (SMU).
Faculty mentor at the STR Dissertation Consortium. *AoM 83rd Annual Meeting* (virtual and Boston, MA)

2022 Symposium session chair and organizer, Thinking Strategically about Network Effects, *AoM 82nd Annual Meeting* (Seattle, WA). Co-organized with J. Ploog.
Faculty presenter at the SMS London Doctoral Workshop on managing and developing your research agenda. *42nd Annual SMS Conference* (London, UK)
Track chair, TIM division, *82nd Annual Meeting of the Academy of Management*

2020 Track chair Digital Transformation for *SMS Special Conference* (Hangzhou, China). With W. Wen (co-chair) (cancelled due to the Coronavirus pandemic)

2019 Two-day public policy workshop on *Competition and Digital Platforms*. One day with policy makers and one day with academics. Jointly organized with Daniel Sokol (University of Florida) and Renato Nazzini (King's College) (London, UK)
Workshop mentor and panelist. *University College London - LUISS Paper Development Workshop for Doctoral Students* (Rome, IT)
2018 Extension co-organizer on Navigating the Platform Business Model. *SMS 38th Annual Conference* (Amsterdam, NL). With S. Khanagha, K. Pandza, H. Volberda
Organizer for the *7th Technology and Innovation Community (TIC) meeting* (theme Ecosystem Innovation). Rotterdam School of Management (Rotterdam, NL).
2017 Showcase Symposium: A Multi-Disciplinary Perspective on Platform Ecosystems Research. *77th Annual Meeting of the Academy of Management* (Atlanta, GA). Co-organized with R. Tee (sponsored by BPS, TIM, OCIS).
Organizer for TIM Doctoral Research Development Workshop. *77th Annual Meeting of the Academy of Management* (Atlanta, GA).
2016 Track chair for BPS division: Competitive Heterogeneity. *76th Annual Meeting of the Academy of Management* (Anaheim, CA).
2014 Panel: Competitive Dynamics and Strategy in Platform-Based Markets. *34th SMS Annual Conference* (Madrid, ES). With E. Altman, B. Kijl, I. Visjnic.
Special Topic Session: Platform Competition and Competition in Two-Sided Markets: Empirical Evidence from the Video Game Industry. *36th INFORMS Marketing Science Conference* (Atlanta, GA). Co-organized with T. Broekhuizen.

STUDENT SUPERVISION

PhD students: Matteo Di Domenico (Co-supervisor, U of Twente, starting year: 2020)
Joe Ploog (First supervisor, UCL, placement: IE Business School)

MSc students: 51 as thesis coach, 34 as thesis co-reader/second marker

SELECTED MEDIA COVERAGE

Reuters, Financial Times, Bloomberg, The Times (Raconteur), TechCrunch, Wired, Polygon, Vox Recode, GamesIndustry.biz, GameSpot, LinkedIn News, Deal Reporter, Seeking Alpha, City AM, Financieel Dagblad (Dutch Financial Times), Business News Radio (Dutch).

INDUSTRY EXPERIENCE

2022 -	Expert witness in US antitrust case concerning large video game platform
2019 -	Member of the UK trade association for Interactive Entertainment (Ukie)
2023	Consultant, Healthy Market Regulation and Competition Policy, Microsoft
2010 - 2013	Strategy Consultant in the video games industry, Strategy Guide, London, UK
2012 - 2013	Business Model Researcher, Ukie, London, UK
2008 - 2011	Strategic Manager, Two Tribes B.V. (Games developer), Harderwijk, NL

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30(b)(6) Deposition of Erik Peterson, November 15, 2023 with Exhibits
30(b)(6) Deposition of Scott Lynch, October 13, 2023 with Exhibits
Deposition of Augusta Butlin, October 11, 2023 with Exhibits
Deposition of Kassidy Gerber, October 5, 2023 with Exhibits
Deposition of Kristian Miller, October 3, 2023 with Exhibits
Deposition of Nathaniel Blue, October 4, 2023 with Exhibits
Deposition of Tom Giardino, November 2, 2023 with Exhibits
Class Certification Report of Steven Schwartz, Ph.D., February 8, 2024
Consolidated Amended Class Action Complaint and Demand for Jury Trial, Case No. 2:21-cv-00563-JCC, Doc. 99, August 26, 2022
Valve's Response to Plaintiffs' September 13, 2023 "data letter," October 6, 2023

Academic Articles and Books

Baker, Jonathan B. & Scott-Morton, Fiona. "Antitrust Enforcement Against Platform MFNs." *The Yale Law Journal* , Vol. 127, No. 7 (May 2018): 2176 – 2202.
Boik, Andre & Corts, Kenneth S. "The Effects of Platform Most-Favored-Nation Clauses on Competition and Entry." *Journal of Law and Economics* , Vol. 59 (February 2016): 105 – 134
Calzada, Joan, Manna, Ester, and Mantovani, Andrea. "Platform price parity clauses and market segmentation." *Journal of Economics and Management Strategy* 31 (2022): 609 – 637
Ennis, Sean, Ivaldi, Marc, and Lagos, Vicente. "Price-Parity Clauses for Hotel Room Booking: Empirical Evidence from Regulatory Change." *Journal of Law and Economics* , Vol. 66 (May 2023): 309 – 331
González-Piñero, M., Redefining the Value Chain of the Video Game Industry, Kunnskapsverket (2017)
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Mansour, Amine. "Identifying the Exclusionary Effect of Across-Platform Parity Agreements: Testing the Tests." *The Antitrust Bulletin* , Vol. 63, No. 2 (2018): 246 – 272

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Rietveld, J., & Eggers, J. P. (2018). Demand heterogeneity in platform markets: Implications for complementors. *Organization Science* 29(2), 304-322

Rietveld, Joost and Joe N. Ploog. "On top of the game? The double-edged sword of incorporating social features into freemium products." *Strategic Management Journal* 43, no. 6 (2022): 1182–1207

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van Dreunen, Joost, *One Up: Creativity, Competition, and the Global Business of Video Games*, Columbia Business School Publishing (2020), Chapters 7 and 8

Yoffie, David B., and Kwak, Mary. "With Friends Like These: The Art of Managing Complementors." *Harvard Business Review* (September 2006): 89 – 98

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"Essential Facts About the Computer and Video Game Industry," Entertainment Software Association, 2019

"Essential Facts About the Computer and Video Game Industry," Entertainment Software Association, 2022

"Essential Facts About the Computer and Video Game Industry," Entertainment Software Association, 2023

"Global Games Market Report" (Free Version), Newzoo, October 2023

"How consumers engage with video games today," Newzoo, June 2023

"Key Insights Into American Gamers," Newzoo, 2022

"State of the Game Industry 2021," Game Developers Conference

"State of the Game Industry 2022," Game Developers Conference

"State of the Game Industry 2023," Game Developers Conference

"State of the Game Industry 2024," Game Developers Conference

CMA Final Report, *Anticipated Acquisition by Microsoft of Activision Blizzard, Inc.*, April 26, 2023

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Analysis of the Most Played Games on Steam

	Most Played Games on Steam in 2023 [1]	Available on GOG as of January 2024?	Available on the Epic Games Store as of January 2024?
1	Goose Goose Duck		
2	Starfield		
3	Lost Ark		
4	DOTA 2		
5	Apex Legends		
6	Baldur's Gate 3	Yes	
7	Sons of the Forest		
8	Destiny 2		Yes
9	PUBG: Battlegrounds		Yes
10	Hogwarts Legacy		Yes
11	Counter-Strike 2		
12	Cyberpunk 2077	Yes	Yes
13	Resident Evil 4		
14	Armored Core VI Fires of Rubicon		
15	Call of Duty Modern Warfare 3		
16	Lethal Company		
17	Rust		
18	Path of Exile Affliction		Yes
19	Team Fortress 2		
20	The Finals		
21	Naraka: Bladepoint		Yes
22	Grand Theft Auto V		Yes
23	Unturned		
24	Battlefield 2042		Yes
25	Valheim		
26	Elden Ring		
27	EA Sports FC 24		Yes
28	Tom Clancy's Rainbow Six Siege		Yes
29	BattleBit Remastered		

Analysis of the Most Played Games on Steam

Most Played Games on Steam in 2023 [1]	Available on GOG as of January 2024?	Available on the Epic Games Store as of January 2024?
30 ARK: Survival Evolved		Yes
31 Football Manager 2023		
32 EA Sports FIFA 23 [2]		Yes
33 Vpet-Simulator		
34 Dead by Daylight V		Yes
35 Don't Starve Together		
36 Football Manager 2024		Yes
37 War Thunder Air Superiority		
38 7 Days to Die		
39 Phasmophobia		
40 Dave the Diver		
41 Sid Meier's Civilization VI		Yes
42 Party Animals		
43 Left 4 Dead 2		
44 Ark: Survival Ascended		
45 Cities: Skylines II		
46 Warframe		Yes
47 Remnant II		Yes
48 Battlefield V		Yes
49 The Sims 4		Yes
50 Rocket League		Yes
51 Monster Hunter Rise		
52 The Forest		
53 DayZ		
54 Star Wars Jedi: Survivor		Yes
55 Farlight 84		Yes
56 VRChat		
57 Risk of Rain Returns		
58 NBA 2K23		

Analysis of the Most Played Games on Steam

Most Played Games on Steam in 2023 [1]	Available on GOG as of January 2024?	Available on the Epic Games Store as of January 2024?
59 V Rising		
60 Terraria	Yes	
61 Crab Game		
62 HoloCure - Save the Fans!		
63 The Witcher 3: Wild Hunt	Yes	Yes
64 Cities: Skylines		Yes
65 tModLoader		
66 My Hero Ultra Rumble		
67 Wo Long: Fallen Dynasty		
68 Final Fantasy XIV Online		
69 Sea of Thieves 2023 Edition		
70 Total War: Warhammer III		Yes
71 Payday 3		Yes
72 Street Fighter 6		
73 Age of Wonders 4	Yes	Yes
74 The Elder Scrolls V: Skyrim Special Edition	Yes	Yes
75 Hearts of Iron IV		
76 Stardew Valley	Yes	
77 Farming Simulator 22		Yes
78 Payday 2		Yes
79 Euro Truck Simulator 2		
80 New World		
81 Hunt: Showdown		
82 Monster Hunter: World		
83 Love is All Around		Yes
84 Lords of the Fallen		Yes
85 Last Epoch		
86 Overwatch 2		
87 Project Zomboid	Yes	

Analysis of the Most Played Games on Steam

Most Played Games on Steam in 2023 [1]	Available on GOG as of January 2024?	Available on the Epic Games Store as of January 2024?
88 Garry's Mod		
89 Yu-Gi-Oh! Master Duel		
90 Red Dead Redemption 2		Yes
Total on rival platforms	8	33

Notes/Sources

[1] https://store.steampowered.com/sale/BestOf2023; The source only reports the top 90 most played games on Steam in 2023 despite the indication that it is a list of the top 100 most played games.

[2] It appears that EA Sports FIFA 23 was removed from all digital distribution platforms, including Steam and the Epic Games Store, in September 2023; see, https://arstechnica.com/gaming/2023/09/fifa-23-delisted-from-digital-stores-as-ea-sports-fc-24-launches/. Thus, for the purpose of this analysis, I have included it in my count of Steam games available on the Epic Games Store.

Appendix C.2

Analysis of the Most Played Games on the Epic Games Store

	Most Played Games on the Epic Games Store as of January 2024 [1]	Available on Steam as of January 2024?
1	Fortnite	
2	Grand Theft Auto V: Premium Edition	Yes
3	Rocket League	
4	Saints Row	Yes
5	Valorant	
6	Ghostrunner	Yes
7	Genshin Impact	
8	EA Sports FC 24	Yes
9	Red Dead Redemption 2	Yes
10	Fall Guys	
11	Honkai: Star Rail	
12	Ghostwire: Tokyo	Yes
13	Naraka: Bladepoint	Yes
14	Destiny 2	Yes
15	The Sims 4	Yes
16	Sid Meier's Civilization VI	Yes
17	Melvor Idle	Yes
18	Cyberpunk 2077	Yes
19	The Outer Worlds: Spacer's Choice Edition	Yes
20	Escape Academy	Yes
21	Bloons TD 6	Yes
22	Cat Quest	Yes
23	Dead by Daylight V	Yes
24	Dying Light Enhanced Edition	Yes
25	Alan Wake II	
26	20 Minutes Till Dawn	Yes
27	League of Legends	
28	The Lord of the Rings Return to Moria	
29	Borderlands 3	Yes
30	PUBG Battlegrounds	Yes

Analysis of the Most Played Games on the Epic Games Store

Most Played Games on the Epic Games Store as of January 2024 [1]	Available on Steam as of January 2024?
31 Hogwarts Legacy	Yes
32 Hitman World of Assassination	Yes
33 Ark: Survival Evolved	Yes
34 Fallout 3: Game of the Year Edition	Yes
35 It Takes Two	Yes
36 Among Us	Yes
37 Magic: The Gathering Arena	Yes
38 Battlefield V Definitive Edition	Yes
39 theHunter: Call of the Wild	Yes
40 Satisfactory	Yes
41 God of War	Yes
42 Dead Island 2	
43 Star Wars Battlefront II: Celebration Edition	Yes
44 Warframe	Yes
45 Europa Universalis IV	Yes
46 Football Manager 2024	Yes
47 Snakebird Complete	
48 Battlefield 2042	Yes
49 Fallout: New Vegas	Yes
50 SnowRunner	Yes
51 Dauntless	
52 Palia	Yes
53 World War Z Aftermath	Yes
54 Human Resource Machine	Yes
55 Star Wars Jedi: Survivor	Yes
56 Shadow of the Tomb Raider: Definitive Edition	Yes
57 Tom Clancy's Rainbow Six Siege	Yes
58 Marvel's Spider-Man Remastered	Yes
59 Idle Champions of the Forgotten Realms	Yes
60 Mount & Blade II: Bannerlord	Yes

Analysis of the Most Played Games on the Epic Games Store

Most Played Games on the Epic Games Store as of January 2024 [1]	Available on Steam as of January 2024?
61 Overcooked! 2	Yes
62 Farming Simulator 19	Yes
63 Cities: Skylines	Yes
64 Surviving the Aftermath	Yes
65 Remnant 2	Yes
66 Control	Yes
67 Rise of the Tomb Raider: 20 Year Celebration	Yes
68 The Elder Scrolls Online	Yes
69 DNF Duel	Yes
70 Farming Simulator 22	Yes
71 Kingdom Hearts HD 1.5+2.5 ReMIX	
72 Assassin's Creed Mirage	
73 Rogue Company	Yes
74 SMITE	Yes
75 Dying Light 2 Stay Human	Yes
76 The Witcher 3: Wild Hunt - Complete Edition	Yes
77 The Evil Within 2	Yes
78 Chivalry 2	Yes
79 Payday 2	Yes
80 Avatar: Frontiers of Pandora	
81 Art of Rally	Yes
82 The Crew Motorfest Standard Edition	
83 Cursed to Golf	Yes
84 Mordhau	Yes
85 The Evil Within	Yes
86 Assassin's Creed Valhalla Standard Edition	Yes
87 Shop Titans	Yes
88 Death Stranding Director's Cut	Yes
89 Tomb Raider Game of the Year Edition	Yes

Analysis of the Most Played Games on the Epic Games Store

Most Played Games on the Epic Games Store as of January 2024 [1]	Available on Steam as of January 2024?
90 Frostpunk	Yes
Total on Steam	74

Notes/Sources

[1] https://store.epicgames.com/en-US/collection/most-played (accessed on January 3, 2024). I only reviewed the top 90 most played game on the Epic Games Store to be consistent with my analysis of most played games on Steam.

Analysis of the "Bestselling (recently)" Games on GOG

	"Bestselling (recently)" Games on GOG as of January 2024 [1]	Available on Steam as of January 2024?
1	Cyberpunk 2077: Phantom Liberty	Yes
2	Heroes of Might and Magic 3: Complete	
3	Baldur's Gate: Enhanced Edition	Yes
4	Robin Hood: The Legend of Sherwood	Yes
5	Yakuza Complete Series	Yes
6	Elder Scrolls III: Morrowind GOTY Edition	Yes
7	Elder Scrolls IV: Oblivion - Game of the Year Edition	Yes
8	Dragon Age: Origins - Ultimate Edition	Yes
9	Mirror's Edge	Yes
10	Roller Coaster Tycoon Deluxe	Yes
11	Baldur's Gate 3	Yes
12	Disciples 2 Gold	
13	Empire Earth Gold Edition	
14	Dungeon Keeper 2	
15	Theme Hospital	
16	Roller Coaster Tycoon 2: Triple Thrill Pack	Yes
17	Empire Earth 2 Gold Edition	
18	Dungeon Keeper Gold	
19	Winter Memories	Yes
20	Stronghold Crusader HD	Yes
21	Dragon's Dogma: Dark Arisen	Yes
22	SimCity 3000 Unlimited	
23	Fallout 2	Yes
24	XCOM 2	Yes
25	Ballance	Yes
26	Medal of Honor: Allied Assault War Chest	
27	Jagged Alliance 2	
28	Diablo + Hellfire	
29	Planescape: Torment: Enhanced Edition	Yes
30	Sacred Gold	Yes

Analysis of the "Bestselling (recently)" Games on GOG

	"Bestselling (recently)" Games on GOG as of January 2024 [1]	Available on Steam as of January 2024?
31	Stronghold HD	Yes
32	Worms 2	
33	Homeworld Remaster Collection	Yes
34	Medal of Honor: Pacific Assault	
35	Nox	
36	Fallout	Yes
37	SimCity 2000 Special Edition	
38	Tex Murphy: Under a Killing Moon	Yes
39	Sacred 2 Gold	Yes
40	Syberia	Yes
41	Silent Hill 4: The Room	
42	Theme Park	
43	Syberia II	Yes
44	People's General	
45	IXION	Yes
46	Blood: Fresh Supply	Yes
47	Alien Breed Trilogy	Yes
48	F-19 Stealth Fighter	Yes
49	Metal Gear Solid	
50	Homeworld: Emergence	
51	The Saboteur	
52	Heroes of Might and Magic 4: Complete	
53	SimCity 4 Deluxe Edition	Yes
54	Serious Sam: The Second Encounter	Yes
55	ANSTOSS 3: Der Fussballamanager	
56	Sid Meier's Alpha Centauri Planetary Pack	
57	Populous: The Beginning	
58	Ultima 7 The Complete Edition	
59	Empire Earth 3	
60	Warhammer: Mark of Chaos - Gold Edition	

Analysis of the "Bestselling (recently)" Games on GOG

	"Bestselling (recently)" Games on GOG as of January 2024 [1]	Available on Steam as of January 2024?
61	Broken Sword 3: The Sleeping Dragon	Yes
62	Sid Meier's Civilization III Complete	Yes
63	Broken Sword 2: Remastered	
64	Tex Murphy: The Pandora Directive	Yes
65	Drakensang	Yes
66	Sid Meier's Pirates!	Yes
67	KnightShift	Yes
68	Tomb Raider: The Last Revelation + Chronicles	Yes
69	Comanche	Yes
70	Homeworld: Desert of Kharak	Yes
71	SPORE Collection	Yes
72	Gothic	Yes
73	Desperados: Wanted Dead or Alive	Yes
74	Ultima Underworld 1+2	
75	Syberia 3: The Complete Journey	Yes
76	Broken Sword 4: The Angel of Death (Secrets of the Ark)	
77	Clive Barker's Undying	
78	Tzar: The Burden of the Crown	Yes
79	Hard Truck 2: King of the Road	
80	Ultima 8: Gold Edition	
81	Pizza Connection	Yes
82	Ultima 4+5+6	
83	Against the Storm	Yes
84	Cyberpunk 2077 - Piggyback Interactive Map	
85	Stronghold Crusader 2: Special Edition	Yes
86	Patrician 3	Yes
87	Ultima 9: Ascension	
88	Tex Murphy: Overseer	Yes
89	X-Com: UFO Defense	Yes

Appendix C.3

Analysis of the "Bestselling (recently)" Games on GOG

"Bestselling (recently)" Games on GOG as of January 2024 [1]	Available on Steam as of January 2024?
90 Wizard's Crown	
Total on Steam	52

Notes/Sources

[1] https://www.gog.com/en/games (accessed on January 7, 2024). GOG does not show the most played games on its platform. Thus, I reviewed the top 90 "Bestselling (recently)" games. I only reviewed the top 90 "bestselling (recently)" games on GOG to be consistent with my analysis of most played games on Steam.

Appendix D.1

Availability of Recent Activision Blizzard Games on Steam

	Activision Blizzard Game [1]	Battle.net Release Date [1,2]	Steam Release Date [3]
1	Call of Duty: Modern Warfare	October 25, 2019	March 8, 2023
2	Call of Duty: Warzone	March 10, 2020	November 16, 2022
3	Crash Bandicoot 4: It's About Time	October 2, 2020	October 18, 2022
4	Call of Duty: Black Ops Cold War	November 13, 2020	March 8, 2023
5	Call of Duty: Vanguard	November 5, 2021	March 8, 2023
6	Overwatch 2	October 4, 2022	August 10, 2023
7	Call of Duty Modern Warfare II	October 28, 2022	October 27, 2022
8	Diablo IV	June 5, 2023	October 17, 2023
9	Call of Duty Modern Warfare III	November 10, 2023	November 10, 2023
10	Sekiro: Shadows Die Twice	Not available	March 21, 2019
11	Spyro Reignited Trilogy	Not available	September 3, 2019
12	Tony Hawk's Pro Skater 1+2	Not available	October 3, 2023

	Number of Games	% of Games
Activision Blizzard Games Available on Steam:	12	100%
Activision Blizzard Games Not Available on Steam:	0	0%
Total Activision Blizzard Games:	12	100%

Notes/Sources:

[1] The Activision and Blizzard websites were used to populate the list of games above (*see* https://www.activision.com/games/ and https://www.blizzard.com/en-us/games). Some games listed on the Activision website were not available on either Battle.net or on Steam (*e.g.* , Crash Team Rumble). Such games were omitted from this Appendix. Some of the games above are available in multiple different editions (*e.g.* , deluxe, standard, etc.). For all games listed above, the standard or basic edition was used as a point of comparison unless otherwise noted.

[2] https://news.blizzard.com/en-us/diablo4/23954935/diablo-iv-launches-soon-here-s-what-you-need-to-know; https://www.pcgamer.com/overwatch-2-launch-time/. The games that do not have a Battle.net release date were not available on the Battle.net platform as of the date of this report.

[3] Steam lists a given game's "release date" both on the game's profile page and next to the game when it appears in Steam search results. For a given game, the release date listed on its store page may differ from the release date listed in Steam search results. A cross-check of Steam game page and Steam search result release dates against third-party press coverage suggests that the Steam search result release dates reflect the date a game was released on Steam, whereas a game's store page may list either the date a game was released on Steam or the date a game was first released on any platform. For this reason, in this Appendix, Steam search result pages were relied upon to determine each date in the "Steam Release Date" column.

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Appendix D.2

Availability of Recent EA Games on Steam

	EA Game [1]	EA Store Release Date [2]	Steam Release Date [3]
1	Apex Legends	February 4, 2019	November 4, 2020
2	Anthem	February 21, 2019	Not available
3	Sea of Solitude	July 5, 2019	June 4, 2020
4	Plants vs Zombies Battle for Neighborville	October 17, 2019	June 4, 2020
5	Need for Speed Heat	November 7, 2019	June 4, 2020
6	Jedi Fallen Order	November 14, 2019	November 14, 2019
7	Super Mega Baseball 3	May 13, 2020	May 13, 2020
8	Command & Conquer Remastered Collection	June 5, 2020	June 5, 2020
9	Kingdoms of Amalur Re-Reckoning	September 8, 2020	September 8, 2020
10	Star Wars Squadrons	October 1, 2020	October 1, 2020
11	Need for Speed Hot Pursuit Remastered	November 6, 2020	November 6, 2020
12	It Takes Two	March 25, 2021	March 25, 2021
13	Mass Effect Legendary Edition	May 14, 2021	May 14, 2021
14	Madden 22	August 19, 2021	August 19, 2021
15	Lost in Random	September 10, 2021	September 10, 2021
16	Crysis Remastered	September 30, 2021	September 17, 2021
17	FIFA22	September 30, 2021	October 1, 2021
18	Battlefield 2042	November 19, 2021	November 19, 2021
19	Grid Legends	February 24, 2022	February 24, 2022
20	F1 22	July 1, 2022	July 1, 2022
21	Madden 23	August 19, 2022	August 18, 2022
22	FIFA23	September 30, 2022	September 30, 2022
23	Need for Speed Unbound	December 2, 2022	December 2, 2022
24	Crysis 3 Remastered	December 14, 2022	November 17, 2022
25	Crysis 2 Remastered	December 14, 2022	November 17, 2022
26	Dead Space	January 27, 2023	January 27, 2023
27	Wild Hearts	February 16, 2023	February 16, 2023
28	PGA Tour	April 7, 2023	April 6, 2023
29	Star Wars Jedi Survivor	April 28, 2023	April 27, 2023
30	F1 23	June 16, 2023	June 15, 2023
31	Madden 24	August 18, 2023	August 17, 2023
32	WRC	October 31, 2023	November 2, 2023
33	Super Mega Baseball 4	December 4, 2023	June 2, 2023

Availability of Recent EA Games on Steam

	Number of Games	% of Games
EA Games Available on Steam:	32	97%
EA Games Not Available on Steam:	1	3%
Total EA Games:	33	100%

Notes/Sources

[1] The EA website was used to populate the list of games above (*see* https://www.ea.com/en-ca/games/library/pc-download). Some EA games listed on the EA website were not available on either the EA App or on Steam (including *Madden 19* , *FIFA20* , *Madden 20* , *FIFA 21* , *Madden 21* , and *Rocket Arena*). Such games were omitted from this Appendix. Some of the games above are available in multiple different editions (*e.g.* , deluxe, standard, etc.). For all games listed above, the standard or basic edition was used as a point of comparison unless otherwise noted.

[2] The EA App was used to determine all dates in the "EA Store Release Date" column with the exception of the release date of *Kingdoms of Amalur Re-Reckoning* , which does not appear to be currently available on the EA App. The EA Store release date of this title was determined using the following source: https://www.thqnordic.com/article/faq-kingdoms-amalur-re-reckoning (note: at the time of *Kingdoms of Amalur Re-Reckoning's* release, EA's game store was called "Origin").

[3] Steam lists a given game's "release date" both on the game's profile page and next to the game when it appears in Steam search results. For a given game, the release date listed on its store page may differ from the release date listed in Steam search results. A cross-check of Steam game page and Steam search result release dates against third-party press coverage suggests that the Steam search result release dates reflect the date a game was released on Steam, whereas a game's store page may list either the date a game was released on Steam or the date a game was first released on any platform. For this reason, in this Appendix, Steam search result pages were relied upon to determine each date in the "Steam Release Date" column.

Appendix D.3

Availability of Recent Ubisoft Games on Steam

	Ubisoft Game [1]	Ubisoft Store Release Date [2]	Steam Release Date [3]	Delay Between Ubisoft Store and Steam Releases (in weeks)
1	Far Cry New Dawn	February 15, 2019	February 15, 2019	0
2	Trials Rising	February 26, 2019	February 26, 2019	0
3	Tom Clancy's The Division 2	March 15, 2019	January 12, 2023	200
4	Assassin's Creed III Remastered	March 29, 2019	March 29, 2019	0
5	Anno 1800	April 16, 2019	April 16, 2019	0
6	Starlink: Battle for Atlas	April 30, 2019	April 30, 2019	0
7	Ghost Recon Break Point	October 4, 2019	January 23, 2023	172
8	Rabbids Coding	October 8, 2019	Not available	N/A
9	Trackmania	July 1, 2020	February 2, 2023	135
10	AGOS: A Game of Space	October 28, 2020	October 28, 2020	0
11	Watch Dogs: Legion	October 29, 2020	January 26, 2023	117
12	Assassin's Creed Valhalla	November 10, 2020	December 6, 2022	108
13	Immortals Fenyx Rising	December 3, 2020	December 15, 2022	106
14	Scott Pilgrim vs. The World - Complete	January 14, 2021	January 5, 2023	103
15	Far Cry 6	October 7, 2021	May 11, 2023	83
16	Riders Republic	October 28, 2021	June 8, 2023	84
17	Monopoly Madness	December 9, 2021	June 22, 2023	80
18	Rainbow Six Extraction	January 20, 2022	June 15, 2023	73
19	Roller Champions	May 25, 2022	December 13, 2022	29
20	Rocksmith+	September 6, 2022	Not available	N/A
21	OddBallers	January 26, 2023	TBD	At least 54 weeks
22	The Settlers: New Allies	February 17, 2023	Not available	N/A
23	The Crew Motorfest	September 14, 2023	Not available	N/A
24	Assassin's Creed Mirage	October 5, 2023	Not available	N/A
25	Avatar: Frontiers of Pandora	December 7, 2023	Not available	N/A
26	Price of Persia: The Lost Crown	January 18, 2024	Not available	N/A

Availability of Recent Ubisoft Games on Steam

	Number of Games	% of Games
Ubisoft Games Available on Steam:	18	69%
Ubisoft Games Not Available on Steam:	8	31%
Total Ubisoft Games:	26	100%

	In Weeks	In Years
Average length of delay between Ubisoft Store and Steam release:	71	1.4

Notes/Sources

[1] The Ubisoft website was used to populate the list of Ubisoft games above (*see* https://www.ubisoft.com/en-us/games). Some games listed on the Ubisoft website were not available on either the Ubisoft Store or on Steam. Such games were omitted from this Appendix. Some of the games above are available in multiple different editions (*e.g.* , deluxe, standard, etc.). For all games listed above, the standard or basic edition was used as a point of comparison unless otherwise noted.

[2] The release date was found on the Ubisoft store (https://store.ubisoft.com).

[3] Steam lists a given game's "release date" both on the game's profile page and next to the game when it appears in Steam search results. For a given game, the release date listed on its store page may differ from the release date listed in Steam search results. A cross-check of Steam game page and Steam search result release dates against third-party press coverage suggests that the Steam search result release dates reflect the date a game was released on Steam, whereas a game's store page may list either the date a game was released on Steam or the date a game was first released on any platform. For this reason, in this Appendix, Steam search result pages were relied upon to determine each date in the "Steam Release Date" column. In the "Steam Release Date" column above, the release date of *OddBallers* is listed as "TBD" (*i.e.* ,"to be determined") rather than "Not available" because, as of the date of this report, *OddBallers* has a "coming soon" page on Steam (see https://store.steampowered.com/app/1064070/OddBallers/). With the exception of *OddBallers* , games that have not yet been released on Steam were excluded from the above calculation of the average length of delay between an Ubisoft Store and Steam release. For the average length of delay calculation, *OddBallers* was assumed to have a release delay of 54 weeks (*i.e.* , the length of time between *OddBaller* 's release on the Ubisoft Store and the date of this report).